THE

AMERICAN JOURNAL OF PHARMACY.

JULY, 1870.

THE CONVENTION FOR THE FIFTH DECENNIAL REVISION OF THE PHARMACOPŒIA OF THE UNITED STATES.

The fifth decennial convention to revise the Pharmacopœia of the United States, met in the hall of the National Medical College, Washington, D. C., on Wednesday, May the 4th, at 10½ o'clock, A. M.

On motion of Dr. Miller, Secretary of the Convention of 1860, Dr. Carson, of Philadelphia, was called to the chair, and Dr. John C. Riley, of Washington, chosen Secretary *pro tem.*

Dr. Miller moved that a committee of five be appointed to nominate permanent officers of the Convention, which was passed, and the chair appointed Dr. Squibb, of New York; Dr. Ruschenberger, United States Navy; Mr. Colcord, Massachusetts; Dr. Geo. M. Dove, Massachusetts, and Dr. Jenkins, Kentucky.

Dr. Howard, of the District of Columbia, moved that the chair appoint a committee of credentials, to consist of five, which was carried, and the chair announced the committee as follows: Dr. F. Howard, District of Columbia; Mr. Procter, Philadelphia; Dr. R. Amory, Massachusetts; Mr. Ebert, Illinois, and Dr. Maddux, Maryland.

The committee reported the following delegates as duly accredited to this Convention: St. Louis Medical College—A. Litton, M. D., J. S. B. Alleyne, M. D. Maryland College of Pharmacy—W. S. Thompson, J. Faris Moore, Louis Dohme. Missouri Medical College—Charles O. Curtman, M. D. St.

Louis College of Pharmacy—O. F. Potter, M. D., Hubert Primm, Eugene L. Massott. Chicago College of Pharmacy—Albert E. Ebert, Henry Biroth, C. Lewis Diehl. Jefferson Medical College—John B. Biddle, M. D., B. Howard Rand, M. D. Medical Society District of Columbia—Thos. Antisel, M. D., C. H. Lieberman, M. D., B. F. Craig, M. D. Medical College of Virginia—J. S. Welford, M. D., R. S. J. Peebles, M. D. Massachusetts College of Pharmacy—Geo. L. H. Markoe, Samuel M. Colcord. Medical Society of New York—Caleb Green, M. D., William Manlius Smith, M. D., Edward R. Squibb, M. D. College of Physicians, Philadelphia—George B. Wood, M. D., Robert Bridges, M. D, H. C. Wood, M. D. College of Pharmacy of City of New York—William Hegeman, William Neergaard, P. W. Bedford. National Medical College—Geo. M. Dove, M. D., Jno. C. Riley, M. D. Medical Department University of Pennsylvania—J. Carson, M. D., Robert E. Rodgers, M. D. Philadelphia College of Pharmacy—William Procter, Jr., John M. Maisch, Alfred B. Taylor. College of Pharmacy of Baldwin University—Martin V. B. Clarke, M. D., Robert D. Murray, M. D. Medical and Chirurgical Society, Louisville, Ky.—Dr. Thomas E. Jenkins. Baltimore Medical Association—Dr. T. Clay Maddux. Medical Department, Georgetown College—Dr. F. Howard, Dr. J. E. Morgan. War Department, Washington, D. C.—Chas. Smart, Surgeon. Navy Department, Washington, D. C.—W. S. W. Ruschenberger, M. D. Washington University, Medical Department, Baltimore—Harvey L. Boyd, M. D., Jas. E. Lindsay, M. D. Massachusetts Medical Society—Dr. S. A. Greene, Dr. Robert Amory, Dr. John Borland. Maine Medical Association—Dr. Henry T. Cummings. Medical Department University, Buffalo—Charles A. Lee, M. D. Medical and Chirurgical Society, Maryland—Dr. W. J. C. Dubamel. Baltimore Medical Association—Dr. J. R. Uhler.

Dr. E. Lloyd Howard, of Baltimore, and Dr. Thos. Miller, of District of Columbia, were invited to take seats in the Convention and to participate in its deliberations.

On motion of Dr. H. C. Wood, of Philadelphia, it was—

Resolved, That such members of Congress of the two Houses as are

graduates of regular medical schools shall be invited to attend the meetings of the Convention and participate in its deliberations, and also the Surgeon General, U. S. A., and Chief of Bureau of Medicine and Surgery, U. S. N.

The committee to nominate permanent officers, reported as follows: President, Dr. Joseph Carson, Philadelphia; Vice-Presidents, Dr. Thos. Miller, Washington, D. C., and William Procter, Jr., Philadelphia; Secretary, Dr. John C. Riley, Georgetown, D. C.; Assistant Secretary, Dr. Jas. M. Morgan, Washington, D. C.

The committee recommended that the Convention direct the Secretary to employ a stenographer to note the proceedings; which report was unanimously adopted.

[Owing to the constant engagement of the stenographic reporters at this time the Secretary was unable to procure one for the service of the Convention.—EDITOR.]

Dr. Carson, on taking the chair, expressed his thanks to the body in a few touching and impressive remarks, and announced that the Convention was ready to proceed to business.

Alfred B. Taylor submitted the report of the Committee of Revision and Publication of the United States Pharmacopœia for 1860; which was accepted.

The President then called for written contributions from societies, toward the revision of the Pharmacopœia, when the following were presented: Albert E. Ebert, from the Chicago College of Pharmacy; H. C. Wood, M. D., from the College of Physicians, Philadelphia; Wm. Hegeman, from the New York College of Pharmacy; Alfred B. Taylor, from the Philadelphia College of Pharmacy; J. Faris Moore, from the Maryland College of Pharmacy; which were referred to a committee of five to report a plan for the revision of the Pharmacopœia.

On motion of Dr. Lee, it was ordered that all societies not prepared to report have permission to hand in their reports to the Committee of Revision.

The President announced the following as the committee to report a plan to revise the Pharmacopœia: Dr. Robert Bridges, William Procter, Jr., S. M. Colcord, and Drs. Walford and Lee.

The Convention then adjourned to 10 o'clock to-morrow morning.

SECOND DAY.

The Convention was called to order at 10 A. M., by Dr. Carson, the President, and the minutes of the preceding day were read and approved.

Dr. Howard, from the Committee on Credentials, reported the following additional delegates: Wm. K. Bowling, M. D., University of Nashville, Tenn.; S. C. Chew, M. D., University of Maryland; Silas L. Loomis, M. D., and Charles B. Purvis, M. D., Howard University Pharmaceutical College; Frederick Horner, Jr., University of Virginia; Chas. H. Thomas, Woman's Medical College, Philadelphia.

The chair presented a communication from the Missouri Medical College; which was referred to the Committee on Revision.

Dr. Lee, from the Committee to Report a Plan to revise the Pharmacopœia, submitted the following report:

The committee appointed with instructions to report a plan for the revision of the United States Pharmacopœia for the year 1870, would respectfully report that they recommend the following resolutions for adoption by this Convention:

1. *Resolved*, That a Committee of Revision and Publication be appointed, to consist of fifteen members, including the President of this Convention as one, to which shall be referred all communications relating to the revision of the Pharmacopœia, and three members shall form a quorum.

2. *Resolved*, That this committee shall meet in the city of ———, and be convened as soon as practicable by the President of the Convention for final organization.

3. *Resolved*, That the committee shall be authorized to publish the work after its revision and to take all other measures that may be necessary to carry out the views and intentions of the Convention.

4. *Resolved*, That if, in the judgment of the Committee of Revision, it should become necessary before the meeting of the Convention of 1880 to revise its labors, it is hereby authorized to publish a new edition.

5. *Resolved*, That the expenses of the Committee of Revision shall be paid from the income of the copyright.

6. *Resolved*, That measures of capacity be abandoned in the Pharmacopœia, and that the quantities in all formulas be expressed both in weights and in equal parts by weight.

7. *Resolved*, That in the revision of the officinal list and formulas the wants of the medical profession in all parts of the United States should

be considered in reference to local peculiarities in climate and population, and for these reasons that the scope of the work be rather extended than abridged.

8. *Resolved*, That the Committee of Revision shall have power to fill their own vacancies.

9. *Resolved*, That after the completion of its labors the committee shall transmit a report of its proceedings to the Secretary of this Convention, to be laid before the next Convention.

10. *Resolved*, That the fourteen remaining members of the Committee of Revision and Publication be selected by a nominating committee, formed of one delegate from each institution represented in this Convention, and of one from the army and navy, respectively, to be appointed by the President.

The report was accepted, and on motion the resolutions were considered *seriatim*.

Dr. Amory, of Massachusetts, offered the following amendment to the first resolution: to strike out the three last words, "form a quorum," and insert "be selected as a sub-committee, who shall report their revision before publication from time to time to the general committee, to be approved or amended, as they may determine;" which was rejected.

Dr. Loomis, of the District of Columbia, moved to strike out "fifteen members," and insert "one from each State represented;" which was rejected; and the resolution as reported by the committee was adopted.

Mr. Colcord moved to fill the blank in the second resolution by inserting "Philadelphia;" which was agreed to; and the resolution was adopted.

After a very interesting discussion the remaining resolutions were adopted without amendment.

[The first resolution called forth much discussion, great difference of opinion existing as to the number that should be appointed, it having been shown by experience that, practically, the work is done by the central members, at the place of publication. Having a paid editor, as in the case of the Brit. Pharm., was suggested, and also a working sub-committee, who should report to a session of the whole committee for its final approval; but the resolution passed as offered.

The 2d, 3d, 4th and 5th resolutions passed without much dissent. The sixth resolution, in reference to the abolition of the use of measures of capacity in the formulas of the Pharmacopœia, was discussed freely, advocated and opposed. Two of the Colleges had asked for the passage

of such a resolution, and those who advocated it were of the opinion that the use of measures of capacity by Physicians in prescribing might be continued if they desired it. It was believed that the use of weights in all cases would add to the accuracy and increase the convenience of laboratory operations, and especially in the fluid extracts and such preparations as require evaporation to a given extent.

The *seventh* resolution, relative to the scope of the Pharmacopœia, was passed by a decisive vote after considerable discussion, showing that the view of the Convention was opposed to contracting the Materia Medica list.—EDITOR A. J. Ph.]

Dr. Manlius Smith, of N. Y., offered the following as an additional resolution:

11. *Resolved*, That this committee are authorized to investigate any new medicine that may be brought forward in the future, and devise formulas for the appropriate preparations of it, and to publish such formulas in the *American Journal of Pharmacy*, and that these formulas shall thenceforth be considered official.

Dr. Squibb moved to strike out the words "*American Journal of Pharmacy;*" which was carried.

Dr. Loomis moved to strike out the words "in the future;" which was agreed to, and the resolution, as amended, was adopted.

Dr. Horner, of Virginia, moved the following:

Whereas the abuse of medicines, the vehicle of which is alcohol, has proved injurious to the health of the community;

Resolved, That the Convention for the revision of the Pharmacopœia consider the expediency of reducing the number of alcoholic preparations. [This resolution was not acted on.]

The delegates from the various institutions represented were then called upon to name one of their number to serve on the nominating committee, and the following were announced: Maryland College of Pharmacy, William S. Thompson; Chicago College of Pharmacy, Albert E. Ebert; Medical Society of the District of Columbia, B. F. Craig, M. D.; Medical College of Virginia, J. S. Welford, M. D.; Massachusetts College of Pharmacy, S. M. Colcord; Medical Society of New York, Caleb Green, M. D.; College Physicians, Philadelphia, R. Bridges, M. D.; College of Pharmacy City of New York, William Hegeman; National Medical College District of Columbia, John C. Riley, M. D.; Medical Department University of Pennsylvania, Joseph Carson, M. D.; Philadelphia College of Pharmacy, Wil-

liam Procter, Jr.; College of Pharmacy, Baldwin University, R. D Murray, M. D.; Medical and Chirurgical Society, Dr. T. E. Jenkins; Baltimore Medical Association, Dr. Uhler; Medical Department of Georgetown College, D. C., Dr. F. Howard; War Department, Dr. Smart; Navy Department, Dr. Ruschenberger; Massachusetts Medical Society, Dr. Amory; Maine Medical Association, Dr. H. T. Cummings; Buffalo University, New York, Dr. Charles A. Lee; University of Nashville, Dr. William K. Bowling; University of Maryland, Dr. S. C. Chew; Howard University of the District of Columbia, Dr. Silas L. Loomis; Women's Medical College, Philadelphia, Dr. Charles H. Thomas.

A recess of thirty minutes was taken to enable the committee to meet.

The committee, on reassembling, reported the following names as the Committee for the Revision of the Pharmacopœia, in addition to the Chairman, Dr. Carson:

Dr. G. B. Wood, Alfred B. Taylor, John M. Maisch, Dr. Robert Bridges, Philadelphia; Dr. Edward R. Squibb, New York city; Albert E. Ebert, Chicago, Ill.; J. Faris Moore, Baltimore, Md.; G. F. H. Markoe, Boston, Mass.; Dr. John C. Riley, Washington, D. C.; Dr. Thomas E. Jenkins, Louisville, Ky.; Dr. Chas. A. Lee, Buffalo, N. Y.; Dr. J. S. Wellford, Richmond, Va.; Wm. F. Wentzell, San Francisco, Cal.; W. S. W. Ruschenberger, for U. S. Army and Navy, Philadelphia.

The report was accepted.

Dr. Squibb tendered his resignation as a member of the Committee of Revision, which was reluctantly accepted, and Dr. W. Manlius Smith, of New York, was elected to fill the vacancy thus created.

Prof. J. M. Maisch also offered his resignation, owing to pressure of other duties, but the Convention being disinclined to accept it, he acquiesced in the appointment.

Dr. Loomis, of Washington, moved that the rules adopted by the Convention of 1860 for the meeting in 1870 be adopted for the Convention in 1880, simply changing the dates; which motion was unanimously adopted.

Dr. B. F. Craig, of Dist. of Columbia, offered the following:

Resolved, That the Committee of Revision be instructed to include some part of the metrical system in the list of official weights and measures.

The resolution was adopted, after a prolonged discussion, which did not give indication of a disposition to adopt the metrical system in the Pharmacopæia at present.

Mr. Procter, of Philadelphia, offered the following, which was unanimously adopted:

Resolved, That the thanks of this Convention are due to the Faculty of the National Medical College of the District of Columbia for the use of their building for the purposes of the Convention.

The Convention, at 5 P. M., adjourned *sine die*.

ON SUPPOSITORIES.

By Herman Koch.

As the application of medicinal substances in the form of suppositories seems to be growing in public favor, I beg leave to make a few suggestions for the benefit of such practitioners as are not supplied with metallic moulds, and may not possess facilities for obtaining the same. The following plan for obviating the use of the latter which I have followed for some time, gives a product of uniform size, shape and weight, and besides being cheaper than metallic moulds, possesses the additional advantage of never spoiling the product by splitting or detaching pieces from the sides.

This is my plan: Take a piece of soft wood cut in the rounded conical shape of a suppository, allowing a portion of the wood in the centre to extend beyond the larger end as a handle; roll a small square piece of waxed paper around the cone-shaped end of same, slanting off toward one of the corners. Secure the latter by a drop of mucilage, and the point by a vigorous twist between the fingers. Remove the paper and lay aside until the mucilage is dry, then reinsert the wooden cone, mark edge of same on the paper by encircling closely between thumb and forefinger, and lastly trim off close to said edge with a sharp knife. Keep the moulds thus formed in a cigar box, the lid of which has been perforated with two or three rows of small

round holes, which will serve to keep them in a vertical position when used. I generally keep on hand three sizes of moulds, holding respectively one, two and three scruples, and mark the wooden cones accordingly. These moulds cannot be used more than once, but can be so readily reproduced that this is scarcely a disadvantage.

Cincinnati, May, 1870.

VACCINIIN, A CRYSTALLIZABLE PRINCIPLE EXTRACTED FROM THE LEAVES OF THE COW BERRY (*VACCINIUM VITIS IDÆA*, L.)

By E. Claassen, Apothecary.

Already in the year 1865, before emigrating to this country, I prepared in Germany this crystalline substance from the plant above named. This plant, so common in Europe, grows in but few places of the Northern United States, particularly in the higher mountains of the New England States.

By boiling the fresh plant with water and quick lime, precipitating the decoction with acetate of lead, filtering, treating the liquid with sulphuretted hydrogen, again filtering, evaporating to the consistency of syrup, and allowing the product to stand for several days, it assumes the form of a crystalline jelly, which being placed upon linen, so as to let the mother-liquor drain off, and then pressed, yields nearly colorless crystals, which are purified by dissolving them in boiling water, treating with animal charcoal, and crystallizing. The amount of vacciniin in the shrub is about 1 per cent. It forms long acicular crystals, of a somewhat bitter taste, and without any smell. In general, many of the crystals are united, forming fascicles, but sometimes you may see them in the shape of four or six-sided (probably rhombical) prisms, with two sides, flattening their ends.*

It is scarcely soluble in ether, pretty easily soluble in cold water and alcohol, but very easily in boiling

*The sides represented by *b* are often so predominant as to be three times as large as those represented by *a*.

water, so much so that the latter, having been saturated with vacciniin, after cooling yields a solid mass.

Heated, it melts to a clear liquid, reduced to coal by stronger heat. Neither subacetate of lead nor tannin render any precipitate. Its reaction on litmus paper is neutral. The vacciniin also contains no nitrogen, for, melted with hydrate of potash, it produced no ammonia. Its elements will be, therefore, carbon, oxygen and hydrogen.

All these properties make me believe that it belongs, like arbutin, to the so-called "bitter substances."

TINCTURA NUCIS VOMICA.

To the Editor:

Dear Sir,—Having occasion to make Tr. Nux Vomica not long since, I made it in the usual way, according to the Pharmacopœia —4 troyounces nux vomica to a pint of alcohol, using alcohol sp. gr. 0·835. I discovered something which I never saw or even heard anything of before. The subject is worth a little notice here, and the readers of the Journal may hear of something that will interest them, and throw light on the subject, in case they ever meet with the same. After making the tincture, I placed it away in its proper place. About two weeks after, I had occasion to use it, and was surprised to find deposited in the bottom of the bottle small, almost colorless crystals, octahedral in shape. Not knowing what they were, but judging from their appearance they were strychnia, I proceeded at once to examine them, being anxious to know what they might be. I filtered the tincture, and collected the crystals on a filter, dried and weighed them, and found them to weigh 3 grains. I applied the bichromate potash ($KO,2CrO_3$) and sulphuric acid (SO_3) test, which produced that purplish color characteristic of strychnia. I also examined it for brucia, and found it to give the faintest red color, using the nitric acid (NO_5) test, thus proving that the crystals were nearly pure strychnia with a small quantity of brucia. Having some of the nux vomica left, I made an infusion with part of it, in order to find whether the nux vomica was alkaline or not, and found it to be decidedly so, using curcuma paper, turning it brownish; it

also restored litmus paper after being reddened by sulphuric acid (SO_3). The cause of the formation of these crystals I believe is due to the alkalinity of the nux vomica. I had a very small quantity left, and examined it to see the amount of strychnia present, and found it to contain about 2 per cent., thus proving that the specimen was very rich in strychnia.*

Yours respectfully,

GEO. W. KENNEDY.

Pottsville, Pa., May 16, 1870.

PHARMACEUTICAL NOTICES.

Chlorinated Lime.

Editor of the American Journal of Pharmacy:

Sir,—Every druggist has been more or less annoyed by his chlorinated lime getting moist (quite semi-fluid sometimes), and consequently unsaleable.

Allow me to recommend (after six months' trial) to keep the lime in *Whitall's patent fruit jars* (410 Race st., Phila.) The lid is made to close air-tight, being kept down on a gum elastic ring by means of a clamp and screw. I filled a jar six months ago, and opened it daily, in order to expose the chlor. lime to the air as much as that kept in the usual way. I found it two weeks ago nearly as dry as when I filled it in, and the smell just as strong. I think the same class of jars would be just the thing to keep carbon. ammonia in.

These jars are to be had in three sizes, viz., pints, quarts, half-gallons—sufficiently large for the quantity daily sold.

* The author does not say to what the alkalinity of the nux vomica was due, but leaves us to infer that it was owing to the strychnia. As strychnia only occurs in the saline state, it is probable that the particular lot of nux vomica treated had previously become mixed, accidentally, with alkaline matter (potassa, soda, or ammonia) before he bought it, which displaced the strychnia and brucia. The greater solubility of the latter will readily account for its absence from the crystals. If the author has any of the drug left, he might verify or disprove this suggestion.—EDITOR AMER. JOUR. PHARM.

Extemporaneous Drop Machine.

I have for some time been using the following method in "dropping," and gaining thereby uniformity in the size of drops (of the same liquid) I think it is worth a corner in your Journal, so much the more as every druggist has the machine at hand.

I simply take a *half ounce glass* measure (graduated), measure off *one drachm* of the liquid, and drop from the measure. Every druggist has at least a *one ounce* measure. In always dropping from the *same measure* from a *same quantity of liquid*, uniformity will be insured.

For obvious reasons the above method cannot well be applied to the dropping of essential oils.

Very respectfully yours, H. M. W.

Philadelphia, May 26, 1870.

NOTE TO HAIR DYE, (*page* 227 *of May No.*)

Cairo, Ill., May 4th, 1870.

EDITOR JOURNAL OF PHARMACY, PHILADELPHIA:

I saw this evening, for the first time, a notice from a party in New York who manufactures an article which he calls "Egyptian Hair Coloring," cautioning persons who buy "hair-restorers," to have their druggists first test them for lead and mercury by means of potassa iodide, and as the preparation mentioned in the article I sent you last month possesses the property of not yielding a precipitate on the addition of that salt, you would oblige me, if it is not too late, by adding to or inserting in the article in question the remarks enclosed with this note.

Yours respectfully, GEO. MCDONALD.

(The reader will consider the following in connection with page 227 of the May number, it having arrived too late for the May number.)

This preparation has the singular property of not indicating the presence of lead on the addition of iodide of potassium. When iodide of potassium is added to a solution of the ordinary salts of lead, a bright yellow precipitate of *iodide of lead* is immediately formed, but when added to this preparation, no change whatever ensues. *The reaction is completely masked.* Sulphuric acid, however, readily indicates the presence of the poison, by the formation of a heavy, white, insoluble precipitate of sulphate of lead.

NOTE ON IMPURITY IN TR. CHLORIDE OF IRON.

EDITOR OF THE AMERICAN JOURNAL OF PHARMACY:

Dear Sir:—In the May number of your Journal of Pharmacy is a communication from Dr. Robert Battey, in answer to a previous one from myself, upon the subject of an impurity in tincture of iron.

He states that the silky white needles that constitute the impurity above mentioned, when tested before the blow-pipe and also by the wet-way, give the characteristic reactions of *sulphate of lime.*

From what I had said upon the subject in the March number of the Journal of Pharmacy, it would naturally have been inferred that the substance in question was some one of the salts of lime, and, in fact, I ventured the conjecture that it was a *silicate* of that base, but did not investigate the matter sufficiently to decide upon its *acid* constituent, as I believed it to be from the glass.

I am happy to acknowledge the correctness of Dr. Battey's opinion, and agree with him that it is doubtless *sulphate of lime*, and as there is some apparently contradictory views between us I will say that both may be made fully to coincide in most particulars. I stated that my conviction was that the impurity arose from the action of the acid upon the glass vessel, and Dr. B. thought that it existed in the acid employed. In order to decide the matter I tested my acid (the same as I had used in preparing the tincture of iron when the crystals were produced.) I found that it contained *sulphuric acid* in a small proportion, but *no lime.*

Now it is plain that if *commercial muriatic acid* be employed, *sulphuric acid* will be a more *probable* impurity than sulphate of lime, but in either case the latter substance may be found in the tincture prepared from such acid. If sulphate of lime *does* or *does not* pre-exist in it, when the mixture is heated the sulphuric acid will act upon the glass and form sulphates of lime, potassa and soda, the former of which will remain dissolved with the rest while the solution is warm; but will crystallize out on cooling.

I am sure that the reaction is generally that of the acid upon

the glass, as I before stated, and the apparent different modifications of the impurity may be caused by the different percentage of acid from which the crystals are deposited. Concerning the yellowish deposit, I am not certain that there is a necessary connection between it and the sulphate of lime; but the precipitation of both must have been *simultaneous* in the case I wrote about.

Yours very truly, J. C. WHARTON.

Nashville, Tenn., June 11th, 1870.

SYRUP OF SENEKA.—CORRECTION.

TO THE EDITOR AMERICAN JOURNAL OF PHARMACY:

Dear Sir:—In my article on "Syrup Seneka," in the last number (May) of this Journal I discover *three* typographical errors, one of which, being in the body of the formula, it is important to correct, viz.: at page 229, in the formula, instead of "White Sugar, in coarse powder, *four* troyounces," it should read "White Sugar, in coarse powder," *nine* troyounces; and at page 230, line 35 from top, I am made to say "I have *varied* that preference in this instance," instead of "I have *waived* that preference in this instance;" also at page 231, line 23 from top, the word *serves* is inserted instead of the word *seems*, as in the manuscript. Will you, therefore, be good enough to give this note a place in your valuable, and usually correct and reliable Journal, and oblige

Yours respectfully,

J. B. MOORE.

June, 1870.

ON UNGUENTUM HYDRARGYRI OXIDI RUBRI.

BY HENRY A. BOWER.

All pharmaceutists, I presume, have been annoyed (and that, too, at a time when it was most inconvenient to make this ointment up fresh) to find (when wishing to use it) instead of a fine red color, it had changed, chameleon like, to an olive-green or black.

Long time ago I adopted the following formula, and have communicated it verbally to others, and my eyes have always been gladdened since to find it retain a rich brilliant salmon color, and I can safely say I have found it never looses its beautiful redness:

℞

Red Precipitate, . . .	℥x	
Castor Oil, ...	f℥i	
Lard, ...	℥vii	Troy
Yellow Wax, opt. (orange color) .	℥ii	"

M.

Melt the wax and the lard together and mix with the castor oil. On cooling, add the red precipitate in *very fine powder*, stirring constantly with a wooden spatula until cold.

Philadelphia, June 13th, 1870.

PHARMACEUTICAL LEGISLATION.

By John M. Maisch.

There is at the present time no civilized country, outside of the North American continent, in which the practice of medicine and of pharmacy is not regulated, at least to a certain degree. Throughout Europe and in the more populated districts of South America, a certain qualification is required of the pharmacists before they are allowed either to take the position of assistants or to assume the entire control of a pharmaceutical establishment. That the standard of qualification required in the various States must of necessity be very different, may be inferred from the political, commercial, and industrial history of these countries, and the general intelligence of their law-makers. It is not our purpose to criticise the various laws; it is sufficient to point to the fact that, aside from the restrictions placed upon the opening of new establishments, which are usually based upon a certain ratio of population, and aside from certain police regulations, the great aim of the laws in all cases is to secure a certain qualification; and the higher this standard, the greater the security of the public against malpractices in every shape and form on the part of the pharmacist. No drug examiner—and if

one was appointed for every store—could increase that security which is afforded by professional integrity, based upon a thorough qualification.

Opinions may differ in regard to the proper means to secure it; the machinery proposed by the American Pharmaceutical Association may be somewhat unwieldy and cumbersome; it has already been simplified by the New Jersey Pharmaceutical Association, and Baltimore has secured a law which, if carried out in spirit, is well adapted to farther build upon.*

With an experience of nearly two hundred years,† Prussia hcs continually endeavored to raise the standard of qualification of her apothecaries, and to educate them in accordance with the progress of science. Since the establishment of the North German Confederation under the guidance of Prussia, it has become necessary to harmonize the laws existing in the various smaller States, and accordingly it is contemplated to issue new laws for the government of practitioners of medicine and of pharmacy. The latter subject has been entrusted to a committee of prominent pharmacists of Northern Germany, who have adopted the draft of a law to regulate the practice of pharmacy in that country (Apotheken-Ordnung), which has been published in the German pharmaceutical periodicals, and from which we extract and condense that portion which is most interesting for this country,—the sections on the education (Ausbildung) of the apothecary, and on the right to conduct a store:

§ 14. An approbated apothecary only can be principal of a pharmaceutical establishment (Apotheken-Vorstand).

§ 15. The owner of the officine‡ shall also be the principal: in certain cases (provided for in the law), however, a lessee or agent (administrator) may be principal.

* In January last a pharmacy and poison law was passed and approved in Rhode Island, which in its main features is identical with the draft recommended by the Amer. Pharm. Assoc., but considerably simplified.

† The first apothecary law in Prussia was promulgated in 1693.

‡ We propose to use the word officine in this paper for pharmaceutical establishment. The Latin officina has been adopted in the French (l'officine) and the German (Officin) languages, and is undoubtedly more expressive for a complete pharmaceutical establishment than either apothecary's shop or store, and also more than office in the popular usage of this word.

§ 16. An apothecary who, for five years, has neither conducted an officine nor acted as assistant, must, previously to becoming principal, prove his capability by another examination.

§ 19. No apothecary can own two or more separate officines; on acquiring the ownership of a second officine the provisions of § 17 apply to him, except the right to lease it to another (*i. e.*, he must appoint a qualified principal at once, and sell the business within a year). Neither can an apothecary conduct two or more officines at the same time.

§ 20. An officine may be owned by two or more persons, qualified to be principals, of whom, however, one only can be the responsible principal.

A. *The apprentice.*

§ 25. Every principal may employ apprentices and assistants; the right to have the former may under certain circumstances be forfeited (§ 38).

§ 26. The number of apprentices in each officine may exceed one only the number of assistants; principals not employing an assistant may have one apprentice.

§ 27 establishes the educational requirements of the apprentice, and § 28 the legal steps to be taken before entering upon the apprenticeship.

§ 29. The duration of the apprenticeship is three years; an abatement of six months may be granted by the district apothecary (Physikats-Apotheker) to those only who previous to entering upon the apprenticeship have attained the qualifications requisite for attending the University.

§ 30. The preceptor is charged with the instruction of his apprentices by practical precepts and exercises in technical pharmacy, and by thorough theoretical teaching of pharmacy and its collateral sciences, for which purpose he must be supplied with appurtenances commensurate to the requirements of science. Apprentices shall not be employed for services not connected with the apothecary business; aside from the daily labor, they must have sufficient time for private study, and, during summer, for botanical excursions; the preceptor has to insist on the preparation by the apprentice of a systematic herbarium of the plants collected by him. He shall also require the apprentice to keep a journal of all preparations made by the pupil, under the direction of the preceptor or his assistant (for which special opportunity must also be afforded for the purpose of instruction), and to enter therein a short description of the operations and the theory of the chemical process.

§ 31. At the termination of his apprenticeship to the satisfaction of his preceptor, the apprentice is to be reported to the district apothecary for examination.

§ 32. The examination for assistant, at which the preceptor is entitled to be present, takes place before a commission consisting of the district apothecary and district physician.

§ 33. The assistant's examination is to be practical and verbal. (a.) The main aim of the practical examination is to determine whether the functions of an assistant may be entrusted to the examinant, who has to read three prescriptions for different medicines, to prepare the same correctly, and to price them (according to the legal valuation, denominated "tax"); also to prove his ability for the practical labors of the laboratory. (b.) The verbal examination begins with the examination of some drugs and chemical preparations for their pharmacological determination, and of a number of fresh or dried indigenous plants for their recognition and terminological demonstration. The examinant shall then translate at least two paragraphs from the Pharmacopœia (which is published in Latin). This is to be followed by the examination in the fundamental principles of botany, natural philosophy and pharmaceutical chemistry, and finally in the legal enactments concerning the duties, &c., of pharmaceutical assistants.

§ 34. The entire examination is to be completed within one day; as a rule, the verbal examination shall not exceed the time of three hours.

§ 35 directs the keeping of minutes of the examination, and in case of disagreement of the members of the commission, to submit the case to the decision of a superior authority.

§ 36. The examinant is responsible for the expenses connected with the examination; each member of the commission receives three thalers, besides travelling expenses.

§ 37. Each failure to pass the examination entails a prolongation of the apprenticeship for six months, after which another examination may take place; those not passing the third examination will not be admitted to another.

§ 38. Should the preceptor be responsible for the insufficient knowledge, he will have to pay the costs of the examination, and may be deprived of the right to employ apprentices.

B. *The Assistant.*

§ 39. The testimonials of the preceptor and examination commission entitles the holder to act as assistant in any officine of Northern Germany.

§ 40. Assistants qualified in Southern Germany have the same privilege; foreigners must have previously passed the prescribed examination.

§ 41. The terms of engagement depend on the agreement between principal and assistant.

§ 42 refers to the mutual relations of principal and assistant.

§ 43. If empowered by the principal, or in his temporary absence (if over a week, the district apothecary has to be notified), the assistant may act as the representative of the principal. The latter is directly responsible; the former shares this responsibility, and is only free from the same if the act has been done by direct order of the principal.

§ 44. At the expiration of the engagement, the principal shall give a certificate to the assistant.

§ 45. The certificate is to be countersigned by the district apothecary, who likewise decides in cases of complaint.

§ 46. An assistant has to serve as such at least three years, two of which must have been spent in German officines.

§ 47. After this time, an assistant has to study the pharmaceutical sciences at a German University for at least two courses (semesters).

§ 48. To matriculate at the University, the pharmacist has to comply merely with the conditions applicable to students of whom a maturity testimonial is not required.

C. *The Pharmaceutical State's Examination.*

§ 49. The State's examination may take place before the examination commission of any North German University. This commission consists of a physicist, a chemist, a botanist and two pharmacists, appointed by the Chancellor of the Confederation.

§ 50. Applications for examination during the summer session must be made in April, and during the winter session in November; they must be accompanied, among other certificates, by the testimonials of apprenticeship, clerkship, and attendance at University; also by a short autobiography.

§ 51. The examination consists of the course and of the final examination. Those only having passed the former can be admitted to the latter.

§ 52. The course examination is as follows: (a,) compounding of a prescription; (b,) making of two pharmaceutical preparations; (c,) writing, in clausure, of an essay on a chemical and its mode of preparation; (d,) the same on a subject of analytical chemistry; (e,) a qualitative and a quantitative analysis; (f,) a forensic analysis for the detection of an inorganic poison; (g,) verbal examination on (1) botany, (2) pharmacognosy, (3) pharmaceutical chemistry, (4) toxicology, (5) pharmaceutical laws.

§ 53. The final examination, which is to be verbal and public, and to which not more than four candidates are to be admitted at one time, comprises general and special botany, general chemistry in connection with mineralogy, and natural philosophy.

§ 54 prescribes the keeping of minutes and the judgment (censur) on each branch, as well as the general censure.

§ 55. The voting takes place by using the terms (1) excellent, (2) very good, (3) good, (4) bad or insufficient. As final censure, the first grade (excellent) can be given only on the candidate having attained in all branches at least the censure "very good;" the second grade (very good) only if the majority of the special censures were "very good."

§ 50. Repetitions of special examinations are admissable only according

to the regulations of the Federal Medical Council. The censure "bad" or "insufficient" makes a repetition of the examination necessary after at least six months; failing to pass after two postponements (three examinations) is regarded as a definitive rejection.

§ 57. Immediately after the final examination, the final censure on the entire State's examination is determined, and the chairman reports the entire proceedings, including the documents of application and admission, to the Federal Medical Council.

§ 58. Based upon the successful passing of the States examination, the federal medical council issues to the candidate the certificate of qualification (approbation) requisite for the conducting of the apothecary business.

D. *The district Apothecary.*

§ 59. The examination for eligibility as district apothecary (Pharmacentische Physikats Prüfung) takes place before a chemist, a botanist and an apothecary, who are members of the states examination commission.

§ 60. Approbated pharmacists, having conducted an officine in Northern Germany for two years, may apply for this examination, which consists

§ 61. A, in a treatise on some subject from the department of pharmaceutical administration; b, in an essay upon a theme of forensic analysis; c, in a forensic analysis with quantitative determination of the poison and an argumentative report; d, in the determination of one or more substances by means of the microscope; e, in a verbal examination on subjects from the same branches.

§ 62 refers to the keeping of minutes, the censuring on each branch in the same manner as in § 55, and to the final censure, which is to be "passed," or "not passed," the former only if the examination of neither branch was rated "bad" or "insufficient."

§ 63. The repetition of the examination on one of the branches is inadmissible. A re-examination can take place after the lapse of at least a year.

The passing of this last examination makes the pharmacist eligible into the various administrative bureaus. The district apothecary (Physikats Apotheker) is elected for five years, by the apothecaries of the larger counties (Kreise), or of several smaller counties; the government (Regierungs) apothecary is appointed for a province; the federal medical council (Bundes Medicinalbehörde), subordinate to the federal chancellory, consists of physicians and pharmacists, with a lawyer as chairman; strictly pharmaceutical affairs are decided by the pharmacists, and medical questions by the physicians only.

DEATH RESULTING FROM AN OVERDOSE OF STRYCHNIA.—AN INTERESTING CASE.

By Charles Bullock.

A case of death, resulting from an overdose of strychnia, occurred recently in Pennsylvania under circumstances which render the case interesting and instructive to both medical practitioner and pharmaceutist.

The patient had been laboring under an attack of partial paralysis, and the medical attendant directed the following prescription:

℞	Strychniæ Muriat:	gr. iss.
	Liq: Ferri Iodid:	ʒvj.
	Syr: Zingiberis q. s. ut ft:	fʒiij.
M.		
	Sig. dose a teaspoonful.	

The whole of this prescription was used as directed, and the bottle returned to the druggist, by order of the physician, for renewal of the medicine, the dose on renewal being increased to one and one-half teaspoonful. This was taken with apparent benefit to the patient, until the last dose, exhausting the contents of the bottle, was given. About an hour after, while at a meal, the patient complained of strange sensations, and was soon affected with tonic spasms, which are described by two medical gentlemen, who were called in, as well marked results of an overdose of strychnia. Proper remedies were promptly used and the spasmodic action passed away, leaving the patient able to speak, but greatly prostrated, and failing to respond to stimulants death ensued in a few hours.

The bottle which contained the medicine was produced before the coroner's jury (composed of physicians and pharmaceutists). It appeared to have been drained of its contents to make up the last dose; adhering to the bottle were well-formed crystals, some of them about a line in length and one-fourth line in thickness. Unfortunately no chemical examination was made to determine whether the crystals were *undissolved* muriate of strychnia or iodide of strychnia. A microscopical examination failed to carry much weight, on account of the destruction of the form of the crystal by washing previous to mounting, the size of the crystal not being accepted in evidence, as crystals of iodide of strychnia were

shown nearly as large, made by simple deposition from a warm saturated solution.

The pharmaceutist by whom the prescription was compounded testified, "that he weighed out the muriate of strychnia, threw it into a graduated measure, added the two other ingredients, and stirred them up with a bone spatula until he thought the strychnia had all dissolved, as he could see no undissolved crystals or solid matter." To a question, he replied that he noticed an opalescent appearance, resembling a quinine mixture.

An inmate of the house with deceased testified, "that she was sure that the bottle of medicine was never shaken."

The prescription as above given had been sent to several prominent pharmaceutists, and the compoundings criticised by the jury. In some no chemical change was discernible, in others crystals readily recognizable as iodide of strychnia were floating through the mixture and deposited in the bottom of the bottle. In one case large crystals were contained in the bottle, evidently of the original strychnia salt undissolved.

The jury, after weighing all the evidence, returned a verdict of "Death from prostration, following the accidental administration of an over dose of strychnia.

"The jury farther find, from examination of the assistant pharmaceutist, by whom the prescription was compounded, a want of proper attention to, or information in manipulation, which they cannot pass without notice and reprimand, as both efficiency and safety may depend on careful manipulating skill when potent remedies are prescribed.

"They farther find that the ingredients of the prescription are subject to such chemical changes as renders the strychnia contained therein *liable* to be precipitated to the bottom of the bottle containing the prescription; and if the bottle should remain without proper agitation, an overdose of strychnia might result."

So much for the history of the case. We now wish to make some remarks on the chemical and pharmaceutical character of the prescription, and throw out some thoughts on prescribing and compounding, as suggested by this case.

Muriate of strychnia is not officinal in the U. S. nor British pharmacopœias, and is rarely prescribed. It is much less soluble

than the sulphate, requiring 50 parts of water, at 71° F., for solution (Gmelin's Handbook). The solubility of iodide of strychnia is not found in any authority which I have consulted. It is spoken of as *very insoluble*. My own determinations make its solubility 0·54 parts in 100 parts of water, at 60° F.*

When a drop of syrup of iodide of iron is added to a cold saturated solution of muriate of strychnia, the insoluble iodide of the alkaloid is immediately formed.

I have before me the prescription alluded to in this communication, put up in two ways. In both the muriate of strychnia was previously dissolved in ʒiss of water. In No. 1 the strychnia solution was mixed with the iodide of iron, and the ginger syrup immediately added and well shaken. In No. 2 the strychnia solution was first added to the syrup of ginger, well shaken and the iodide of iron added. In No. 1 the bottom of the bottle is covered with crystals of iodide of strychnia, and many floating crystals suspended in the mixture. In No. 2 no decomposition is discernible, and after standing four days no deposit has taken place.

On page 1418 of the U. S. Dispensatory, 13th edition (1870), after quoting from this Journal the experiments of Bouchardat and Gobley on the insolubility of iodine combinations with strychnia, the authors add: "But though this fact *establishes the impropriety of combining solutions of iodine and strychnia in prescriptions*, yet it by no means justifies the inference drawn from it, that iodine might serve as an antidote to strychnia. Indeed, the contrary has been proved by the experiments of Mr. S. Darby, who found the precipitated iodide of strychnia was highly poisonous to the lower animals, &c."

We have, in the above quotation, information given regarding the insolubility of iodide of strychnia and the impropriety of prescribing iodine and strychnia solutions in combination.

It is clearly the duty of the pharmaceutist to see that when potent remedies are prescribed in solution that the *solution is complete*. He ought, also, if allowed to dispense such articles, to

* Hydrochloric and even acetic acid much increase the solubility of the iodide, without apparent decomposition, when the acids are very dilute.

be informed regarding decompositions liable to occur, and if possible guard against mischief likely to result therefrom, or else return the prescription to the writer, with his objections clearly stated. He should also notice, when such a prescription is returned for renewal, whether any deposit has taken place in the bottle, and remove it by washing should such be the case. The question whether it is his duty to mark the bottle "Shake well" when the recipe gives no such direction, is one admitting of different opinions; but we think, when so marked, the error, if any, is on the side of prudence.

We would suggest to physicians, when prescribing a remedy like strychnia in solution to its usual *full dose*, to prescribe it alone, and to give *separately* whatever else may be deemed advisable. We have in our experience been made aware of changes unforeseen and unknown to us, until the event developed the facts.

Philadelphia, June 15, 1870.

THE PERCENTAGE SYSTEM.

MR. EDITOR.

Dear Sir: If not intruding, will you allow your humble correspondent a few words in your valuable journal? The subject may not be, in a scientific point of view, of direct advantage to the profession at large, but it may be productive of some good, and serve to promote the dignity as well as the final interest of our vocation. It is a subject also in which the public is deeply concerned, for whose benefit alike we should labor. No where could the matter be better introduced than in the columns of the Journal of Pharmacy, where it will be at once brought before the public bar, and where it will especially meet the immediate verdict of the proper opinion. In our profession we stand before the tribunal of scientific criticism and of commercial intercourse; and every false theory, or every deviation from honest dealing, is subject to the public judgment. It burthens us therefore with sorrow when we are called upon to chronicle the shortcomings of professional brothers who would seek to further there own gains at the expense of their neighbors; or who would sink themselves to the level of genteel beggary.

The present article is not written with animosity towards any one; nor is it dictated by any other than a kindly spirit. The author does not know that he has ever suffered in consequence of unfairdealing from any quarter; duty alone suggested his action.

That our occupation has been for a long time, and still is, degraded by many engaged in it, is a well-established truth; and that many of the higher profession have assisted in this degradation cannot be denied. That a remedy is seriously required all may concede.

The degradation to which I allude, sir, is the practice of offering and allowing physicians a percentage on their prescriptions. This humility has been whispered around for years past with muttered condemnation, yet none so bold as to proclaim the dishonesty.

It is not the writer's intention to charge so grave a matter upon any single individual, or upon any particular class of druggists. It is sufficient to know that the evil does exist; and the guilty ones only will feel the just rebuke. Those physicians who would thus stoop from their high position, must certainly know the injustice they do their patients, when they consider from whose purses the percentage generally comes. They must know, also, how utterly cruel it is to send, often a poor creature, in inclement seasons to a distant store for trifling medicines which could be obtained equally as well from competent druggists in the immediate vicinity; and then, in many instances, only to be overcharged for their trouble. How unfair! How dishonorable! thus to impose on the necessary ignorance of others.

May I ask you, kind reader, is it not time the evil was cried down? Is it not time, in this era of religious, political, scientific and industrial reformation, that the druggist should arouse from his humility, assert his manhood, and prove to the world that he is not the miserable wretch as depicted by Shakspeare, who would sell his veriest poison for a paltry mite of gold, even to send a poor soul to its final account? Our calling is a noble one, needing but a little advancment to rank with the noblest of all. Will you not, Mr. Editor, lend us your influence to destroy this habit, which has become a public shame?

Respectfully, your obedient servant,

Baltimore, Md., May 31, 1870. A. CALDWELL.

NURSING SYRUP AND WORM LOZENGES.

The following recipes have been sent to us by Mr. Henry C. Morse, pharmaceutist of Elmira, N. Y., with the assurance that they are the real formulæ of the preparations indicated, and that they are at the service of the readers of the Journal. Mr. M. remarks :—

"The nursing syrup is an excellent preparation, and is sold quite extensively with us, not as a patent medicine, but from the large bottle, as we do 'Godfrey's Cordial,' being a much finer looking preparation, not unpleasant to the taste and quite as harmless.

"The 'Worm Confections' might be used in places where there is a demand for reliable goods in that shape, and when one does not like to recommend patent medicines of unknown composition."

"*Mrs. Wheeler's Nursing Syrup.*"

℞	Sacchari,	℥xxxv.
	Liquoris Calcis,	℥xl.
	Extracti Papaveris fluidi,	℥jv.
	Olei Anisi,	ʒi.
	Extracti Podophylli Aquati,	℥ss.
	Spiriti Rectificati,	℥ij.
	Misce.	

"*Mrs. Wheeler's Worm Confections.*"

℞	Hydrargyri Chloridi Mitis,	ʒi.
	Sacchari,	ʒx.
	In pulv. subtillis. tere.	
Adde.		
	Sacchari,	℥xxv.
	Santonini,	ʒvi.
	Misce et fiat. rhom. No. 360.	

Please observe that the syrup contains about two drops Extractum Papaveris fluidum in each teaspoonful; and the confections contain one grain Santonin and one-sixth of a grain of Calomel in each tablet.

The Ext. Podophylli Aquati is of the same strength as the ordinary fluid extracts, 16 Troy oz. to the pint.

REVIEWS.

Die Pflanzenstoffe in chemischer, physiologischer, pharmakologischer und toxikologischer Hinsicht. Für Aerzte, Apotheker, Chemiker und Pharmakologen bearbeitet von Dr. Aug. Husemann (Professor der Chemie an der Kantonschule in Chur) und Dr. Theod. Husemann (Privatdocent der Pharmakologie und Toxicologie an der Universität Göttingen). Berlin, Julius Springer, 1870.

The vegetable compounds in their chemical, physiological, pharmacological and toxicological relations. For physicians, apothecaries, chemists and pharmacologists.

We have received the first part of this work (256 pages), which the authors hope to complete in two more parts of about the same size. We consider it of such importance as to deserve an extended notice, although we can hardly do justice to the great labor bestowed upon the subject.

The introductory chapter treats, in a concise manner, on the nourishment of plants, the changes which the inorganic food undergoes in passing from cell to cell, on the importance of the proximate principles of plants in medicine, and their internal, endermatic and hypodermic employment, on physiological and pharmacological observations, and on toxicology. The chapter concludes with the classification of the vegetable compounds adopted by the authors, namely, in proximate principles (alkaloids, acids, neutral principles) and in mixtures (volatile oils, resins, fats).

The following 43 pages contain the general remarks on the alkaloids, a historical sketch, their occurrence in certain natural orders, genera, species, and different parts of plants, their preparation and purification, their physical and chemical properties, forensic analysis, physiological action and therapeutical uses, antidotes and the forms in which they are usually exhibited.

The different alkaloids are then considered, arranged according to the natural orders in which they occur, and the text amply supplied with marginal notes to facilitate the finding of the different subjects. For morphia (p. 111–145) we find the following subheadings: Literature (chemical, pharmacological and toxicological), discovery, occurrence, preparation, processes (Sertür-

ner, Hottot, Merck, Duflos, Wittstock, Mohr, Robertson-Gregory), preparation of all important principles in opium, morphiometry (Guillermond, Roussille, Guibourt, Schacht, Hager, Kieffer, Fleury), yield, properties, purity, composition, salts (simple and double), decomposition (sulphomorphid, oxymorphia, apomorphia, methylmorphia, ethylmorphia), behavior to reagents, forensic analysis, history of its pharmacological and toxicological relations, relation to the activity of opium, action on animals, result of physiological experiments with animals, elimination, action on man, symptoms of acute poisoning, toxical and lethal doses, post mortem appearance, antidotes, physiological proofs, therapeutical use, contra-indication, dose and application.

The other alkaloids are treated similarly, and, as is evident from the foregoing, pretty exhaustively. We have observed very few omissions, for instance, the occurrence of berberina in Coptis trifolia and Menispermum canadense, while, on the other hand, the literature has been made use of to the very time of publication, as in the case of buxina, which, in accordance with Flückiger's arguments, is regarded identical with Wiggers' pelosina and Maclagan's bebeerina. The pharmaceutical literature of the United States has been consulted pretty thoroughly, though it is apparent in one or two references, dating back some 12 or 15 years, that the original papers were not at the authors' command. The medical literature of the United States is hardly referred to, except what became known in Europe through the British journals. Among others, we miss the researches on narceina by Dr. J. M. Da Costa (1867).

The work supplies a want which has been frequently felt, and it certainly deserves a prominent place in the libraries of scientific men. The getting up of the work is creditable alike to the publishers and the authors, who have corrected it with great care. J. M. M.

Materialien zu einer Monographie des Inulins, von Dr. G. Dragendorff, ord. Professor der Pharmacie an der Universität Dorpat. St. Petersburg, 1870.

Materials for a monograph on inulin, &c.

This work is a critical review of all the investigations and

statements concerning inulin which have appeared since its discovery by V. Rose, in 1804, in the periodical and other literature of continental Europe. To clear up many contradictory statements of other investigators, and to ascertain the relation of inulin to the development of those vegetables in which it is found (compositæ), the author has undertaken numerous experiments, the results of which are merely given, without tedious descriptions and repetitions. The immense number of facts enumerated and reviewed are described concisely and with terseness. The historical introduction is followed by chapters on the occurrence, the preparation, the composition, the properties and chemical behavior, the qualitative and quantitative determination of inulin, and its relation to other carbohydrates, as well as its importance for the plants. These headings of the various chapters do not convey any idea either of the exhaustive research into the literature, or of the tedious investigations on this subject, pursued by the author. The book gives a succinct account of our knowledge of inulin up to the present time, and for a good deal of the same we are indebted to the indefatigable investigations of the author. The work is printed in clear type, upon 141 pages, large octavo. It contains copious references to the original essays of the various writers on inulin, and has been very carefully corrected, the typographical errors being very few, and easily corrected. J. M. M.

Die Analyse des Harns. In Fragen und Antworten für Mediciner und Pharmaceuten zusammengestellt, von Dr. Arthur Casselmann. Mit 3 lithographirten Tafeln. St. Petersburg, 1868.

The analysis of urine. In queries and answers for physicians and pharmacists. With three plates.

This little work, which was received only a few weeks ago, is an excellent pocket companion for those who are interested in the analysis of urine. The entire arrangement is very comprehensive, and the queries greatly facilitate the reference. The answers are concise and clear, and the operations and tests are described with sufficient minuteness. We believe that a translation into English would be welcome to many of our pharmacists, and particularly physicians, who would gladly accept such a very practical guide in urinary analyses. J. M. M.

GLEANINGS FROM GERMAN JOURNALS.

By John M. Maisch.

The Volatile Acids of Croton Oil, according to A. Geuther, are mainly acetic, butyric and valerianic acids, probably some œnanthylic acid, and of the oleic series perhaps pyroterebinic and higher acids. A liquid acid $C_8H_6O_4$ (Schlippe's crotonic acid) does not occur in croton oil, nor is its solid acid identical with angelicic acid, with which, however, it agrees in composition, $C_{10}H_8O_4$. This tiglinic acid constitutes more than one-third of the volatile acids of croton oil; it fuses at 64° C., and boils at 201·1° C., while angelicic acid fuses at 45° and boils at 190° C.—*Zeitschr. f. Chemie*, 1870, I, 26–28.

Decomposition of Oxalic Acid in Aqueous Solutions. Giov. Bizio found (Il nuovo cim. [2] 1·272) that 0·4 grm. oxalic acid in one litre of water is gradually oxidized by the atmospheric oxygen to carbonic acid, while more concentrated solutions are permanent.—*Ibid.* II, 52.

Paper from Hop Stems is made at a factory near Marseilles, in France; it is of an agreeable whiteness, strong and soft.—*Pharm. Zeitg.*, 1879, N. 22.

Liebig's Infusion of Meat, being of a red color, is very soon disliked by the patients; by filtration it becomes of a pleasing appearance, and is taken for a much longer time without becoming repugnant; after maceration the magma is thrown upon a filter, a little more of meat and water having been used.—*Ibid.*

Adulteration of Saffron. Heræus noticed about 9 years ago an adulteration of (5 cwt.) saffron with 12 per cent. chalk and 4 per cent. honey, and calls attention to the fact that Spanish saffron is sometimes met with adulteratad by honey, sometimes by honey and chalk. Honey causes the saffron, when pressed in the warm hand, to cake together and become sticky; chalk is readily observed on throwing the saffron into water, when the chalk subsides.—*Wittstein's V. Schr.*, 1870, 91, 92.

Myrobalans are recommended by R. Hennig for the preparation of tannin. They are about one-fourth to one-third the price of Chinese, and one-eighth to one-sixth the price of Aleppo galls. The former yield 45, the next 75 and the last 65 per

cent. of tannin. Sound and light colored myrobalans are reduced to a coarse powder, washed with cold water, dried and treated with ether in the usual manner. The tannin obtained is closely related to the tannin of Aleppo galls.—*Pharm. Centr. H.*, 1869, 370.

Pure Chloroform, made by E. Schering from chloral hydrate, and after having been treated with pure concentrated sulphuric acid, has a specific gravity of 1·5022 at 15° C., and boils between 62·3 and 62·5° C. Exposed to the sunlight for several days it is not altered in the least, and Hager concludes that those who observed differently, experimented with an impure chloroform. The best and only rational mode for preparing chloroform for internal use is, according to Scherer, from chloral hydrate.—*Ibid*, 1870, 128–139.

Test for Chloral-Alcoholate. Hager uses Lieben's iodoform test for detecting the presence of alcohol in chloral hydrate, and operates as follows: About 0·5 grm. chloral hydrate are dissolved in 10 c.c. distilled water, the solution is made lukewarm, and sufficient solution of iodine in iodide of potassium is added to render it dark brown; potassa solution is now carefully dropped in until the liquid is just rendered colorless. Every drop of the potassa solution produces a turbidity which disappears on agitation if the chloral hydrate is pure, but is permanent in case of alcohol being present, from the formation of iodoform, a portion of which is dissolved by the chloral.—*Ibid.* 155.

Solubility of Sulphates in Sulphuric Acid. If sulphuric acid containing lime, baryta, strontia or lead, is evaporated in a platinum dish, the sulphates of these bases are obtained in the form of small shining crystals, which are not altered by raising the heat above 338° C., the boiling point of sulphuric acid. H. Struve found that 100 parts of acid will dissolve

	Concentrated Sulphuric Acid.	Nordhausen Acid.
Sulphate of lime,	2·03	10·17
" baryta,	5·69	15·89
" strontia,	5·68	9·77
" lead,	0·13	4·19

—*Zeitschr. f. Anal. Chemie.*, 1870, 34–38.

Pure Methylic Alcohol does not yield iodoform with potassa and iodine; its formation points out impurities, like aceton, ethylic alcohol, &c.—*A. Lieben, in Annal. d. Chem. und Pharm.*, Suppl. vii, 377.

Ferricyanide of Potassium. Prof. E. Reichardt recommends, even on the large scale, the substitution of chlorine by bromine for oxidizing the ferro- to the ferricyanide of potassium. If bromine be added in small quantities the reaction will be completed after some agitation in a few minutes; the crystallizing salt will be much purer than if made by chlorine, and from the mother liquor the bromine may be recovered. *Archiv d. Ph., April*, 1870, 48–50.

Extract of Meat. Prof. Reichardt has analyzed an extract of meat, which has made its appearance in German commerce and is prepared by Buschenthal & Co., in Montevideo. After comparing his results with Liebig's, Vogel's and his own analysis of the extract furnished by the Liebig Company of Fray Bentos, he comes to the conclusion that the absolute purity of Buschenthal's preparation cannot be doubted.—*Ibid.* 55–57.

Bellis perennis, Lin. J. B. Enz has analyzed the flowers of this plant with the following result: Loss on drying, 8·14; etherial extract, 1·8, containing tannin (green precipitate with iron salts), volatile oil, malic acid, potassa and lime salts, wax, fat, chlorophyll, fermentable sugar, acrid and bitter principle; alcoholic extract 3·2, containing sugar, tannin, tartaric and malic acids, potassa and lime salts, resin, anthoxanthin, acrid and bitter principle; aqueous extract 7·0, containing mucilage, anthoxanthin, potassa, lime and magnesia in combination with tartaric, malic, muriatic, sulphuric and phosphoric acids; 1·1 extracted by very dilute muriatic acid, consisting of pectin, gum, oxalate of lime and phosphates of lime and magnesia; 3 per cent. albuminous matter was extracted by dilute potassa solution; a minute quantity of volatile oil and 2·5 per cent. liguin. The author's process for obtaining a solution of the odorous principle appears to be applicable for other vegetable substances; it is as follows: the flowers are macerated for a week with glycerin, expressed, the liquid diluted with water, agitated with chloroform, the chloroformic solution evaporated spontaneously,

and the residue dissolved in pure alcohol.— *Wittstein's Viertelj. Schr.*, 1870, 1–14.

Extract. Physostigm. Venenos. Alcohol. J. B. Enz obtained, by exhausting Calabar beans with alcohol of 83 sp. gr., 2 per cent. of a deep green extract, the color of which is not altered by concentrated sulphuric acid, but on the subsequent addition of bichromate of potassa changes to blood red. The alkaloid is not entirely taken up by alcohol from the Calabar bean, unless the same be previously deprived of resin and fat by ether. The author recommends to preserve this extract (and other narcotic extracts) by Appert's method against the influence of light and air.—*Ibid.* 14–16.

Oxidation of Paraffin by Fusion. Bolley and Tuchschmid ascertained that paraffin, heated to 150° C. in contact with the air, is slowly converted into a dark brown body, which is elastic like caoutchouc, becomes gelatinous at 100° C., does not fuse at a higher temperature, is insoluble in alcohol, ether and acids, slightly soluble in benzol and boiling alkaline solutions, and contains 70·04 C., 10·25 H. and 19·71 O.—*Ibid.* 291, *from Schweiz. polytechn. Zeitschr.*, xiii, 65.

Poisoning by Arnica Flowers. Dr. A. Schumann, of Dresden, relates the case of a woman who, for suppressed menstruation, drank an infusion of a handful of arnica flowers. After half an hour she was taken with violent vomiting and severe congestion, in a few hours with intense pain in the stomach and intestines, when after nine or ten hours collapse set in. On the third day the pains returned, and together with intercurrent diarrhœa, continued for eight days longer, notwithstanding suitable treatment.—*Zeitschr. d. œsterr. Apoth. Ver.*, 1870, 134, *from Schmidt's Jahrbücher.*

Estimation of Iodine. W. Reinige uses a solution of 2·5 grm. permanganate of potassa in 497·5 grm. distilled water, one gramme of which oxidizes two milligrm. iodine to iodic acid; the presence of iodate, chlorine and bromine are without influence on the result. The operation is performed as follows: the iodine is combined with potassium, the solution is rendered faintly alkaline, and heated to boiling, when the solution of the

permanganate is gradually added until the liquid above the rapidly subsiding precipitate of peroxide of manganium remains of a reddish color; the excess of the permanganate is now titrated with hyposulphite of soda.—*Zeitschr. f. Anal. Chem.*, 1870, 39–41.

Permanganate of Potassa in Alkaline Solution.—Dr. Mohr proves that if this solution is absolutely free from organic matter it may be heated to boiling without turning green. (*i. e.*, becoming reduced to manganate). For making such solutions fused alkalies only ought to be employed, and the use of filtering paper, strainers and all organic materials ought to be carefully avoided.—*Ibid.* 43–45.

P. W. Hofmann's Method of Preparing Pure Hydrochloric Acid (see Amer. Jour. Pharm., 1869, 420), according to Fresenius, yields in all stages of the process an acid containing much arsenic, if this metal was present in one of the crude acids, and also free chlorine, if the sulphuric acid contained oxides of nitrogen.—*Zeitschr. f. Anal. Chem.*, 1870, 64–66.

Influence of Ammonia on Guaiacum Paper. A Greiner found that guaiac paper, moistened with a very dilute solution of sulphate of copper and exposed to the vapors of ammonia or carbonate of ammonia, assumes a blue or blue green color, and regards it as hazardous to attempt to distinguish these gases from hydrocyanic acid merely from the different tints produced with this test paper (HCy colors it indigo blue).—*Ibid.* 94, 95.

Sanguinarina. H. Naschold has prepared this alkaloid and a number of its compounds and studied their properties; his formula for the alkaloid is $C_{34}H_{15}NO_8$.—*Zeitschr. f. Chem.*, 1870, 119–121, *from Journ. prakt. Chem.*

Among the prize queries of the Academy of Medicine in Madrid for the year 1871, is one to demonstrate, by practical experiments, which variety of poppy is best adapted to culture in Spain, the yield of opium and the percentage of morphia contained therein.—*Pharm. Zeitung*, 1870, No. 22.

The philosophical faculty of the University of Goettingen has published the following prize query of the Beneke fund for the year 1870: The exact determination of the atomic weight of

the metals of the earths, together with proofs on the limits of errors in the results obtained; also a critical analysis of the scientific material bearing on this point; the faculty desires also a treatise on the query, whether the hypotheses of Prout and Dumas ought to be rejected, or whether the differences between these hypotheses and the observations may be explained by sufficient chemical or physical reasons. The essays must be written in the German, Latin, French or English language, and handed in by August 31, 1872. First prize 500 thalers, gold; second prize 200 thalers, gold.—*Ibid. N.* 31.

The Petroleum Industrial Society of Halle has offered two prizes of 5000 thalers ($3,500) each, 1, for the discovery of a chemical compound to purify crude paraffin presscakes with little loss (not over 5 per cent.), and, 2, for the discovery of apparatus, &c., for cooling quantities of paraffin at every season to at least 5° C. (21° F.)—*Ibid. N.* 33.

ON THE DISTRIBUTION OF NITROGENATED COMPOUNDS IN HYOSCYAMUS NIGER AND ALBUS, IN DIFFERENT STAGES OF THEIR DEVELOPMENT.

By Ernst Thorey.

Pharmaceutische Zeitschrift für Russland, 1870, p. 129–142, publishes extracts from the inaugural essay of the author, from which we extract and condense some tables, showing the variation of the percentage of the nitrogenated compounds in different periods of the growth of the plants. We give the results only for the *dry* parts, and for the minute analytical details refer to the original. The numerous analyses, while on the one hand pointing to an intimate relation between some of the nitrogenated compounds, prove also the effect of climate and soil, and show the necessity of having the leaves of henbane collected during the early stages of its growth, or until the flowers have made their appearance.

Of the analytical processes employed, it must be mentioned that the alkaloid was determined by Mayer's test solution, the nitric acid by Schulze's modified method with aluminium, and the ammonia as platinochloride of ammonium from the distillate

obtained by treating the material with caustic soda, distilling with strong alcohol and collecting in muriatic acid. The albumen was estimated from the amount of nitrogen obtained by deducting the nitrogen contained in the alkaloid, nitric acid, ammonia and nitrogenated resin (present mainly in the seeds) from the entire amount of nitrogen contained in the plant and estimated by elementary analysis.

Hyoscyamia is best prepared from the bruised seeds, which must be previously exhausted by petroleum ether to free it from fixed oil. The seeds are now exhausted by alcohol acidulated with a little muriatic acid, the alcohol is distilled off, so that the residue weighs about one-fifth of the original weight of the seeds, half the quantity of water is added, the alcohol entirely evaporated, the resin filtered off and the filtrate evaporated in vacuo to one-half. It is now agitated with chloroform to remove coloring matter, then supersaturated with potassa and again repeatedly agitated with chloroform. The chloroformic solution of the alkaloid is agitated with water slightly acidulated with muriatic acid, which, on evaporation, yields yellowish white muriate of hyoscyamia crystallizing in needles united in the shape of a cross. One kilogramme yields about half a grm. If the aqueous solution is treated with potassa and agitated with chloroform (or benzine) the pure alkaloid will, on evaporation, be left behind in fine needles; ether and amylic alcohol will yield it in an uncrystallized state.

The analyses of Hyosc. niger for 1868 refer to plants or parts of plants collected from seven different localities, the third columns of each series to plants from the botanical garden at Dorpat. Hyosc. niger analysed in 1869, and H. albus analysed in 1868 and 69 were raised in the same botanical garden.

***Hyoscyamus albus*, 1868.** *Percentage for the dry material.*

	Before flowering (beginning of June.)		Flowering plants (middle of August.)		Fruit bearing plants (middle of Sept.)	
	Alkaloid.	Saltpetre.	Alkaloid.	Saltpetre.	Alkaloid.	Saltpetre.
Leaves,	0·588	1·325	0·359	1·378	0·211	1·104
Stems,	0·012	0·078	0·036	0·072	0·027	0·041
Roots,	0·128	0·054	0·146	0·039	0·106	0·039
Fruits and Seeds,					0·162	

Hyoscyamus niger, 1868. 1. *Percentage of Alkaloid.*

	Before flowering (end of May.)				Flowering plants (end of June.)				Fruit bearing plants (end of August, September.)					
Leaves,	0·208	0·188	0·154	0·216	0 224	0·158	0·147	0·173	0·042	0 055	0·065	0·069	0·012	
Stems,	0·075	0·084	0·070	0·080	0·046	0·030	0 082	0·034	0·003	0·004	0·009	0·008		
Roots,	0·057	0·032	0·027	0·052	0·204	0·193	0·127	0·134	0·052	0·049	0·028	0·057		
Fruits with Seed,									0·066	0·086	0·075	0 101		
Seeds,													0·163	0·106

2. *Percentage of Nitrate of Potassa.*

Leaves,	2·082	1·328	1·221	1·361	1·692	1·120	1·015	1·200	0·275	0·056	0·639	0·864	0·194	
Stems,	0·383	0·198	0·162	0·171	0·101	0·182	0·149	0·154	0·011	0·009	0·044	0·069		
Roots,	0·248	0·106	0·107	0·211	0·119	0·170	0·192	0·206	0·050	0·042	0·024	0·073		
Fruits with Seeds,									0·083	0·103	0·128	0·102		
Seeds,													0 076	0·040

The following table exhibits the quantitative results of the dry material grown in 1869; the column of May 6th refers to the cotyledons of the sprouting plant; that of May 28th to young plants, three weeks old.

		Hyoscyamus Albus.					Hyoscyamus Niger.			
		May 6.	May 28.	June 15.	July 20.	Sept. 11.	May 9.	June 2.	July 6.	Sept. 2.
Leaves,	Alkaloid.	0·4506	0·4102	0·4694	0·3292	0·1533	0·4989	0·1927	0·2061	0·1107
Stems,					0·0480	0·0291		0·0174	0·0302	0·0105
Roots,				0 1764	0·2625	0·0859	0·0808	0·0199	0·1379	0·0559
Seeds,						0·1727				0.1187
Leaves,	Nitrate Potassa.	0·3871	0·7234	1·2726	1·0599	0·9059	1·3850	1·4268	0·9914	0·8206
Stems,					0 0711	0·0487		0·0910	0·1844	0·0571
Roots,				0·1235	0·0500	0·1152	0·1084	0·1155	0·2425	0·0351
Seeds,						0·0688				0·0371
Leaves,	Ammonia.	0·0771	0·1813	0·2568	0·5702	0·806	0·3171	0·7305	0·7435	0·7669
Stems,					0·1386	0·1193		0·1605	0·1814	0·1038
Roots,				0·1127	0·3869	0·1617	0·1546	0·1540	0·4240	0·1471
Seeds,						0·1017				0·2613
Leaves,	Albuminates.	28·86	28·05	19·40	16·59	8 99	28·11	17·63	16·71	10·31
Stems,					10·97	9·10		6·50	9·97	8·99
Roots,				24·33	26·66	12·34	25·99	19·13	19·38	13·82
Seeds,						10·43				10·46

The decrease and increase of the nitrogenated constituents appears to occur in the plant with a certain uniformity. The

albuminates decrease in all the organs towards autumn; but if the dry substance of the entire plant is taken in consideration, their absolute quantity is increased.

J. M. M.

ILLUMINATING GAS FROM PETROLEUM.

By. C. A. Martius.

The very low price of petroleum has caused many experiments to be made to utilize it for the production of illuminating gas. This has been best accomplished by Hirzel, of Leipzic, who uses crude petroleum, or preferably the residues left on the rectification of the crude oil, which may be obtained at a low price.*

The gas is produced by conducting the oil from a reservoir through a tube in a uniform current into a red hot retort; the gases pass through an ascending tube, a receiver and a condenser filled with bricks into the gasometer. The process is very simple and devoid of danger. About 200 cubic feet of gas are obtained in an hour. An obstruction in the tubes does not occur, but after some time the retort must be opened and the coke raked out.

This is undoubtedly the purest illuminating gas, and consists only of carbohydrogens, which are not condensed by cold or pressure, and may be kept without alteration and without losing its illuminating power. Neither oil nor tar is separated in the pipes, and the gas is free from carbonic acid, sulphurous and ammoniacal compounds, so that it may be collected in the gasometer without undergoing any purification.

It is remarkable for its high specific gravity, = 0·698 (coal gas = 0·42) and its great illuminating power, which is four and and a half to five times greater than that of ordinary coal gas, so that burners may be used which consume only three-fourths to at most one and a half cubic feet per hour.

It has a peculiar odor, so that leaks in the pipes may be readily discovered; but the odor, which reminds of acetylen, is different from and less disagreeable than that of coal gas. Acetylen is present in this gas in such proportion that the acetylen-

* Hirzel's gas apparatus is figured and described in the American Engineer of June 18, 1870, published by Evans & Co., Philada.

copper compounds may be readily obtained from it in large quantities.—*Wittstein's Viertelj. Schr.*, 1870, 281—286, *from Ber. der deutschen Chem. Gesellsch.*, 1868, Nos. 7 and 8.

J. M. M.

PURIFICATION OF DEXTRIN.

By Dr. H. Hager.

R. Forster has analyzed some commercial dextrin with the following results:

Dextrin,	72·45	70·43	63·60	59·71	49·78	5·34
Sugar,	8·77	1·92	7·67	5·76	1·42	0·24
Insoluble matter,	13·14	19·97	14·50	20·64	30·80	86·47
Water,	5·64	7·68	14·23	13·89	18·00	7·95

The insoluble matter consists mainly of unaltered starch.

Dextrin is a very good vehicle for dry narcotic extracts; it has also been recommended by Becker for internal use as an excellent stomachic; for medicinal use, therefore, dextrin must be purified, which, according to Hager, is best accomplished in the following manner:

10 parts dextrin are dissolved in a cylindrical vessel in 18 parts cold distilled water by agitation; after standing, the clear solution is decanted or strained through flannel and mixed with 1½ to 2 volumes of 95 per cent. alcohol. The liquid is decanted from the doughy precipitate which is dissolved in little distilled water, and the solution spread upon glass or porcelain plates to dry in a warm place.

Purified in this way and rubbed to powder, dextrin is a whitish or white powder, which dissolves in distilled water to a clear, yellowish, nearly inodorous solution, of a mild and sweetish mucilaginous taste; diluted with water it must acquire merely a faint violet tinge with iodine water, owing to the presence of a small quantity of soluble starch, which is of no importance. To free the dextrin entirely from this starch, the clear, aqueous solution is mixed with enough alcohol to produce a strong turbidity, decanted after standing for a week and then completely precipitated; or the impure solution of 10 dextrin in 18 water is mixed with 3 parts of alcohol, decanted after a week and then precipitated by 1½ volumes of alcohol.—*Wittstein's V. Schr.*, 1870, 113–115.

J. M. M.

PROCESS FOR PRODUCING A BRIGHT COATING OF PLATINUM UPON GLASS, PORCELAIN, &c.

By Prof. Dr. R. Böttger.

The first requisite is perfectly dry platinum chloride, entirely free from acid, which, in a small porcelain mortar, is well triturated with oil of rosemary, to be renewed several (about three) times, until the brownish red chloride forms a black soft plaster-like mass, free from undecomposed chloride. The oil of rosemary by combining with chlorine, turns yellow; it is removed and the residue is then triturated with about five times its weight of oil of lavender, until the whole forms a thin, uniformly homogeneous liquid, which is set aside for about half an hour, when it is ready for use.

This thin liquid is painted, by means of a soft brush, in a uniform, very thin, layer upon the porcelain, china or glass; for the thinner the layer the more lustrous will afterwards be the platinum coating. All that remains now to be done is to heat the objects for a few minutes to a very dull, scarcely visible, redness, when, if this temperature has not been exceeded, they appear with a most beautiful silvery lustre, without requiring any additional labor.

Should, through some neglect, the platinum coating be imperfect, or should an object have been broken, the platinum may be recovered without the use of aqua regia, by the following extremely simple galvanic process: The coated surface is covered with ordinary muriatic acid, and then touched with a zinc rod; in consequence of the evolution of hydrogen from both sides of the platinum, this is at once separated as an extremely thin film, which, notwithstanding its specific gravity, partly rises to the surface. On filtering off the muriatic acid, the whole of the platinum is recovered.

It is important not to keep the platinizing liquid on hand over a day, since it deteriorates on keeping.

The active portion of the liquid is an organic platinum salt, which may be obtained in faintly yellow, small octohedrons, on carefully pouring alcohol on a larger quantity of the liquid; the crystals, on the approach of a flame, burn with a bright light,

leaving platinum behind of a bright whiteness and in a compact condition.

The author particularly recommends this process for the preparation of mirrors for microscopes, as well as for astronomical purposes.— *Wittst. Vierteljahres Sch.*, 1870, 39—41, *from Jahresb. d. physik. Ver. zu Frankfurt*, 1867—68.

J. M. M.

ON THE RHATANY ROOT OF PARA.

By Dr. F. A. Fluckiger.

In a thesis "Etude comparée sur le Genre Krameria et les racines qu'il fournit à la médecine," presented by Cotton, in 1868, to the Paris Ecole de Pharmacie, he describes, under the name of rhatanhia des Antilles, a root, the origin of which he referred to Krameria Ixina, which yields the Savanilla rhatany. Dr. Flückiger has examined Cotton's root, and found it identical with the rhatany described by Berg, in 1865, under the name of Brazil rhatany. In larger quantities the officinal Payta rhatany has a red, the Savanilla a violet and this Para rhatany (so-called because exported from Para) a grey-brown color. The latter, like the Savanilla rhatany, is colored blue-black by sulphate of iron; it possesses, in comparison to the other two roots, a remarkable elasticity; the transverse fissures frequently have sharp turns and occasionally surround the root, and some roots have occasionally numerous globular suberous warts two to three millimetres in diameter. These external marks, particularly if not merely a few pieces are examined, are entirely sufficient for recognizing the Para rhatany.

The author sums up his remarks as follows:

1. There are at present in commerce three different kinds of rhatany, which are best named after their principal ports of exportation, Payta, Savanilla and Para.

2. The first two kinds are described according to origin and characters in every modern work on pharmacognosy.

3. The Para root was first described by Berg, as radix ratanhiæ* brasiliensis, by Cotton as rhatany of the Antilles.

* Dr. F. argues that ratanhia is more proper than ratanha. According to the distinguished botanist, Richard Spruce, *rattani*, in the language of the Quichuas, means I pack, tie &c., and ratanhia is probably derived from the same root. The Spanish Pharmacopœia of 1865 writes ratania.

4. Its color varies between dark grey and brown; the extremes of this color were regarded by Cotton as black and brown varieties.

5. This color is very distinct from that of Payta and Savanilla rhatany.

6. The origin of Para rhatany is unknown.

7. The substitution, in medicine, of Payta rhatany by another is inadmissible. There exist in regard to the tannin, chemical differences which deserve to be investigated. The tannins predominating, or exclusively present perhaps in Savanilla and Para rhatany, produce bluish black precipitates with iron salts. —*Schweiz. Wochenschr. f. Pharm.*, 1869, 227–231.

J. M. M.

ON A SPECIES OF IPOMŒA, AFFORDING TAMPICO JALAP.*

By Daniel Hanbury, Esq., F.R.S., F.L.S.

Two centuries and a half have elapsed since Jalap, the tubercule of a convolvulaceous plant of Mexico, was introduced into the Materia Medica of Europe. The botanical origin of the drug long remained unsettled, evidence of which exists in the fact that two plants, neither of which yields jalap, have in succession received, and still retain, the specific name *Jalapa*. The veritable source of jalap, however, was brought to light between the years 1827 and 1830,† in which latter the plant was described by Wenderoth as *Convolvulus Purga*. In 1833 it was figured by Hayne under the name of *Ipomœa Purga;* but in 1839 it was transferred, on account of its tubular corolla and exsert stamens, to Choisy's genus *Exogonium*. As this genus has been recently united to *Ipomœa* by Dr. Meisner, it appears best to return to the name proposed by Hayne, and to call the true jalap-plant *Ipomœa Purga*.

The unsettled condition of Mexico, and the fluctuations of commerce, have alternately depreciated or enhanced the value of jalap, and have led to the occasional importation of other roots possessing more or less of the characters of the true drug. Of

* From the author.

† Mr. Hanbury, as a just historian, might well have noticed the labors of Dr. Coxe and Mr. Nuttall in this connection. See D. B. Smith's paper Jour. Philad. Col. Pharm., vol. 2, April, 1830.—Ed. Am. Jour. Pharm.

such kinds of jalap, one of the most remarkable is a tubercule imported a few years ago for the first time from Tampico, and thence called *Tampico Jalap.** This drug has been extensively brought into the market (that is to say, by hundreds of bales); and though it is less rich in resin and less purgative than true jalap, yet, on account of its lower price, it has found a ready sale, chiefly in continental trade.

As the botanical origin of this so-called Tampico Jalap, and even its place of growth, were completely unknown, I addressed a letter, in November 1867, to my friend Hugo Finck, Esq., Prussian Vice-Consul at Cordova (Mexico), begging that he would, if possible, procure for me some information on the subject. Mr. Finck at first expressed strong doubts as to Tampico jalap being anything else than the root of *Batatas Jalapa*, Chois., known in Mexico as *Purga macho*. Upon inquiry, however, he ascertained that such could not be the case, but that it is a production of the State of Guanajuato, where it grows along the Sierra Gorda, in the neighborhood of San Luis de la Paz. At this town and in the adjacent villages, it is purchased of the Indians and carried by the muleteers to Tampico, where it is known as *Purga de Sierra Gorda*.

All attempts to procure specimens of the plant were for some time fruitless, chiefly owing to the difficulty of finding any one in the district who could be induced to take the needful trouble. The perseverance of Mr. Finck and his friend Mr. E. Benecke, Consul General for Prussia in the city of Mexico, overcame at length this obstacle, but only to meet with others hardly less embarrassing. The first lot of specimens dispatched from Guanajuato was stolen from the mail; the second shared the same fate; while a third, which included live tubercules, was, by successive detentions on the way, fully five months in reaching England. The box, however, came to hand in June last (1869); and amid a mass of damp earth and decaying matter, I had the satisfaction of discovering one solitary tubercule exhibiting signs of vitality. This, placed in a greenhouse and carefully nursed, soon began to grow with rapidity, and, on removal to an open border, produced a tall and vigorous plant, which towards Sep-

* I cannot, at least, trace this jalap to have been offered in commerce as a distinct sort earlier than about five or six years ago.

tember showed signs of flowering. It was then taken up and replaced in the greenhouse, where it blossomed freely in October last, but did not mature any seeds. Accompanying the tubercules, but of course in a separate box, my correspondent sent some pressed and dried specimens from Guanajuato, which correspond perfectly with the growing plant.

Having ascertained, from the study of these materials, that the plant belonged to the genus *Ipomœa*, I endeavored to identify it with some species described in the "Prodromus" of De Candolle, or in the subsequently published "Annales" of Walpers, but without success. Neither was I able to find any corresponding specimen in the herbaria of the British Museum or of the Royal Gardens of Kew. In the Paris Museum there is a plant, collected by Galeotti on the lofty Cordillera near Oaxaca, which, so far as scanty specimens enables me to judge, accords precisely with that received from Mr. Finck. It bears a number which is not mentioned in the enumeration, by Martens, of Galeotti's *Convolvulaceæ* (contained in the "Bulletin de l'Académie Royale de Bruxelles"*); and I therefore conclude that it is unnamed. Under these circumstances, I have drawn up the following diagnosis and description of the plant, which I propose to call *Ipomœa simulans*. The specific name is chosen in allusion to the remarkable similarity which the plant bears in foliage and habit to the true jalap (*Ipomœa Purga*, Hayne), not to mention the resemblance of its tubercules. The funnel-shaped corolla and pendent flower-buds of the Tampico jalap-plant are quite unlike the corresponding parts of *I. Purga*, and furnish a ready means of distinguishing the two species:—

IPOMŒA SIMULANS, sp. nov. Radice tuberosâ, caule volubili herbaceo glabro, foliis ovatis, acuminatis, cordatis v. sagittatis, indivisis, pedunculis unifloris solitariis, sepalis parvis.

Hab. in Andibus Mexicanis *Sierra Gorda* dictis, prov. Guanajuato (fide cl. *Finck*); in regione frigidâ ad ped. 8000 propè Oaxaca (*H. Galeotti*, no. 1369 !).

Radix napiformis v. subglobosa v. elongata, carnosa, 2–3 poll. longa, basi fibrillosa. *Caules* herbacei, graciles. *Folia* glaberrima, 2–4-pollicaria, 1–2 poll. lata, lobis baseos acutis v. rotundatis v. subtruncatis, petiolo tenui, 1¼–2¼-pollicari. *Pedunculi* axillares, petiolum subæquantes, penduli, uniflori v. in plantâ vegetiore novelli alabrastra

* Tome xii. pt. 2 (1845), p. 257.

duo ferentes, altero semper (ut videtur) abortivo. *Pedicelli* incrassati, basi bracteis 2 minutis. *Sepala* ovata, obtusa, exteriora paullulum breviora. *Corolla* infundibuliformis, 1½–2 poll. longa, glabra, rosea, pallidè striata. *Stigma* bilobum. *Capsula* calycem superans, conica, 2-locularis, valvis 4 coriaceis. *Semina* glabra.

—*Extracted from the Linnean Society's Journal.—Botany, vol. xi.*

METHYL-ETHYLIC ETHER.—A NEW COMPOUND FOR THE PRODUCTION OF RAPID GENERAL ANÆSTHESIA FOR SHORT OPERATIONS.*

By Benjamin Ward Richardson, M.A., M.D., F.R.S.

In introducing the subject before the Medical Society of London on the 14th instant, the author explained that within the past two or three years a practice had been followed of producing quick insensibility, which should be followed by equally quick recovery. Two agents had been employed for this purpose (*b*) nitrous oxide gas and bichloride of methylene. Accepting that the principle of producing quick insensibility had a practical intention and usefulness, Dr. Richardson said he had objection to the methods which, up to the present time, were adopted for carrying the principle into practice. His objections to nitrous oxide gas were as firm as ever. He held still, that the employment of an agent which excluded all atmospheric air during inhalation, which produced the most perfect asphyxia, which required for its administration costly and troublesome apparatus, and which, if administered beyond a given period, even for a few seconds, must of a necessity kill, was a bad agent for anæsthetic administration, was, in fact, a rude and vulgar process, retrogressive in science.

Respecting bichloride of methylene, though it was hard to speak against any application of a remedy which he, the author, had introduced, he must be candid and say that he was not favorably impressed with the application of bichloride for *quick* general anæsthesia. That it was marvellously rapid in its action was true, that it answered the end it had in view was true, and that it had now been used for rapid inhalation an immense number of times was also true. But these facts could not conceal

*Abstract of Papers read at the Medical Society of London on March 14 and 21.

the further and all-important fact, that the bichloride of methylene belonged to a dangerous family of chemical substances, and could not, therefore, be played with without risk. It had been extolled as being safer than chloroform, and that was allowed; for as it contained an equivalent of chlorine less than chloroform, it was materially safer, but the safety was relative not absolute. Under these impressions, the author was led recently to review experimentally the action of the whole of the more promising anæsthetic fluids and vapors, including chloride of methyl, bichloride of methylene, chloroform amylene, hydride of methyl-ethylic ether, methylic ether, and some others, which were given on a table placed before the society. The result was that he had decided in favor of methylic ether for rapid anæsthesia. The anæsthetic properties of methylic ether were first discovered by Dr. Richardson, in 1867, and the substance has been reported upon by him in two reports to the British Association for the Advancement of Science. On the 20th of May, 1868, he inhaled it for the first time himself, Dr. Sedgwick and Mr. Peter Marshall administering it to him to complete insensibility. He was narcotized completely in one minute, was unconscious in seventy seconds, and recovered almost instantaneously without nausea, headache or other unpleasant symptom. From that time the author has been in the habit of narcotising occasionally with methylic ether, and recently with marked success.

The ether is made by digesting one part of pure methylic alcohol with two of strong sulphuric acid. The mixture is heated, and the methylic ether, which passes over as a gas, is subjected to frequent washings in strong potassa solution. The ether remains as a gas even below zero; it has an ethereal odor; it is chemically an oxide of the radical methyl; its vapor density is 23, taking hydrogen as unity. The strongest objection to methylic ether is that it is a gas, but, happily, the difficulty is to a large extent overcome, the gas being very soluble in various substances; water takes up thirty-seven volumes of the gas, yielding an ethereal fluid of very pleasant taste; pure ethylic ether and alcohol take up over 100 volumes, and chloroform and bichloride of methylene nearly as much. For practical purposes the author prefers absolute ethylic ether of sp. gr. ·720,

and boiling point of 920° F. as the solvent. The ether is charged with the gas at a temperature of 32° F., and the compound is at once bottled and firmly corked down. It should be kept for a time before being used, the process of keeping producing a comparatively stable compound. In using this compound, which he proposes to call methyl-ethylic ether, the author at present employs the simple mouthpiece invented by Mr. Rendle, and made merely of leather. He is adding to this a reserve bag, in order to conserve the ether. From one to two drachms may be put into the inhaler for quick narcotization.

Dr. Richardson next described cases in which the methyl-ethylic ether had been administered to the human subject for the extraction of teeth; in eleven cases the whole operation, from commencement of the inhalation to the complete recovery, was under three minutes; in several cases one minute was sufficient, while in two cases forty-five seconds sufficed. In no case was there spasm, syncope, or asphyxia during inhalation, or any after nausea, and in all cases there was a semi-consciousness, so that the patients did what they were bade to do, remembered what had been done, and yet were not conscious of pain.

The author next described the action of methyl-ethylic ether on the nervous centres, comparing it with chloroform and other anæsthetics containing chlorine. He showed that this ether produced no excitation of the nervous centres which supply the vascular system as chloroform does; and that, consequently, there was absence of muscular spasm, of contraction of blood-vessels and of syncope from fatal contraction of the heart. When it was carried to the extent of arresting life in the inferior animals it produced death, by paralyzing the organic nervous centres. This extreme result was preceded by convulsive action, similar to that which is seen in death from hæmorrhage, the convulsion being due to the absence of arterialized blood in the muscles. So well, however, did the heart still retain its power, that in one case, in a lower warm-blooded animal—a guinea pig—the respiration returned *spontaneously* in pure air four minutes and forty-five seconds after it had ceased. No fact could more definitely speak in favor of the safety of this agent.

In conclusion, the author said that as he had confined himself this time to rapid anæsthesia for short operations, his remarks

must be taken as bearing on that subject only. He had introduced methyl-ethylic ether as the readiest and best agent he knew of for the purpose described. It was better than nitrous oxide gas, because it allowed air to be given with it, and did not asphyxiate; it was better than bichloride of methylene, because it did not produce muscular spasm and syncope. At the same time he did not consider it as perfect, nor should he consider general anæsthesia perfected, until he or some other observer shall discover an agent that will destroy sensibility without interfering at all with organic muscular life, volitional power, or consciousness. Methylic ether approached this perfection, though it did not touch it, and it encouraged perseverance in experimental research. For these reasons it was worthy the attention of the society.

Dr. Richardson again brought this subject before the Medical Society of London on the 21st instant. He dwelt upon the value of methylic ether as a general anæsthetic, recording his experiences of it during the last eight days. He mentioned the difficulties he had encountered, first in keeping the methylic ether in solution, and secondly in method of administration, and explained how these difficulties were to be met. Respecting method of administration, he said that the ether must be confined in a bag, in connection with the inhaler, and from the bag it must be volatilized, by means of a hand bellows. The instrument for this purpose was shown, the elastic bag contained layers of domette to receive the ether. By this means all the ether was utilized, and usually two drachms would be found a sufficient quantity. Dr. Richardson reported, that since the last meeting of the society he had administered the ether seventeen times, and with a success quite equal to his expectations. The ether produced quick relaxation of the muscles, with dilatation of the pupils, and this last was a good test of insensibility. The blood which flowed during an operation retained its arterial hue, and there was no sign of asphyxia, or of vomiting. Recovery was rapid, and methylic ether promised to be the best and safest of anæsthetics. In prolonged operations it might be advantageously mixed with bichloride of methylene, the two fluids being in equal parts. The effect of bichloride in causing spasm and vomiting was greatly controlled by the ether.—*The Med. Press and Circular, Dublin, March* 30, 1870.

ON FLUID EXTRACTS.

By E. H. Sargent.

The great importance which attaches to this class of preparations, and the near approach of the revision of the Pharmacopœia, must constitute my excuse for presenting the following suggestions:

Simplicity is a cardinal virtue, either in or out of a pharmacopœia, but more especially in the construction of formulas for the use of American apothecaries.

That pharmacists should prepare all, or nearly all the Galenical preparations which they are called upon to dispense, will admit of no doubt; it therefore is a duty to simplify our processes in such a manner that they will, while meeting the requirements of medicine, induce all pharmacists to manufacture these preparations for themselves, yet it is undeniably a fact that only a small minority do so, and the reason may be sought for with some profit, if it, when found, induces a change for the better. It is hardly necessary to call attention to the great variety of fluid extracts offered for sale, nor to the well known dissimilarity in the productions of different manufacturers, showing utter neglect of the pharmacopœia in nearly all cases, and in some a sad lack of the proper medicinal strength, thereby materially impairing the moral force of the pharmacopœia, and, what is of greater importance, furnishing inferior medicine to the sick. The injustice of dispensing inferior preparations falls chiefly upon the physicians and their patients; as the physician can determine the dose proper to be administered, only from his knowledge of the drug itself, it is of the utmost importance that the preparation shall fairly represent a known quantity of the drug. The quantity is immaterial, so that it is known, as the fitness of any preparation for a certain use must be left for the physician to decide, from his knowledge of it; and the knowledge must be definite or he may fail, and place in danger the life of his patient. The physician lacking this knowledge has no method of determining the character of a preparation (until he has seen its effect) except by its physical properties, and all must be aware how little can be known from the taste, smell, or

appearance of a fluid extract, showing the importance of employing a standard that shall not be violated by the caprice, or the more unworthy motive of avarice, of the vendor. It certainly is no light matter to trifle with life and health; the laws of conscience, if not the laws of the land, should prevent it, and every incentive should be presented that is possible, to encourage both the pharmacist and the manufacturer to prepare and sell only officinal preparations, whenever formulas are supplied.

In considering the present officinal formulas for fluid extracts it may be asked, what is the design or purpose of a formula? The reply will be, that pharmacists may prepare the article as ordered. Then it must follow that all formulas *should* be constructed so as to adapt them to general use. Such certainly was the intention of the revisers of our own national pharmacopœia, but after a trial of ten years are the results satisfactory with the class referred to? It will not be denied that, with a *few* exceptions in our larger cities, apothecaries depend upon the manufacturing specialist for the supply of fluid extracts. In looking for a reason may we not safely assert that nearly all the objections met with originate in the practically impracticable formulas of the pharmacopœia, requiring, as they do, a degree of skill, a perfection of manipulation, and an honesty of purpose, which, at least, are none too common. This charge made against pharmacists may lead some to suspect that ordinary honesty is a rare quality in the trade, but the inference is not a fair one. The objections to the present formulas are many and serious. The extracts offered by manufacturers are recommended by leading medical journals and appear satisfactory to physicians, who, it may be stated, have learned their strength by experience, and, therefore, know what quantity to prescribe, so that wilful dishonesty is not charged, but the fact remains, as the writer has verified by many inquiries, that not over ten per cent. of the apothecaries in the U. S. prepare or sell fluid extracts made in accordance with the formulas of the U. S. Pharmacopœia. It may be said that the greater fault is with the apothecary, but how shall it be remedied? is the serious question. No ordinary arguments or appeals for the authority of the pharmacopœia will suffice. The difficulty must be met by removing all excuse for

it, and the furnishing of practical formulas for fluid extracts, suited to the requirements of the limited trade of the majority of American pharmacists. The best method for removing the difficulty should be honestly sought and applied. To the writer, no other yet presented promises so much as the suggestion of Mr. Diehl, so ably advocated in the *Pharmacist* for April, by Mr. Bartlett, showing the advantage of a reduction in the strength of fluid extracts. It points out an easy and unobjectionable method for correcting the greatest abuse that pharmacy and medicine now suffer from. It is necessary to keep in mind, when considering proposed reforms, that we must take the world as we find it, *time* being necessary for reconstruction. It is also the part of wisdom to make only such laws as we are able to enforce. Is it wise, therefore, to retain a series of formulas that not one out of ten apothecaries will attempt to use? Rather, is it not our duty to so modify the formulas that each well-disposed pharmacist will prepare what he requires for dispensing? There need be no compromise with ignorance, nor with dishonesty in this matter, for the better reasons are all in favor of the proposed change, while it is difficult to name a sufficient reason for maintaining the present standard. Perhaps the best one adduced is that it is convenient for physicians to remember the proportion of "ounce to ounce," yet it is difficult to imagine a memory so poor as to forget the proportion of one half ounce of the drug to the fluid ounce of extract, particularly when we now have two preparations of that strength.

The only other reason urged, of any weight, is that such a standard was adopted ten years ago, and has been generally advocated as the right one, yet, to admit this as a good argument, would prevent making any changes in our present formulas. Further, this supposed reason is negatived by the fact, that the fluid extracts in common use are not made by this standard, nor equal it in strength.

Experience should lead to improvement, and prejudice should be cast aside in questions of so much importance as this.

The present system forces a compromise with right by compelling a large majority of druggists to use the inferior preparations so extensively advertised by specialists, each claiming to

be better than his neighbors, and also claiming some marvellous method of his own for cheapening medicines. The evil complained of is not confined to fluid extracts, as it is becoming a too common habit to prepare tinctures and syrups from these inferior commercial preparations. It is by such use that the lack of proper quality becomes most apparent. The writer has been shown tinctures and syrups thus prepared which bore no resemblance to the officinal, yet were dispensed in full assurance that the effect would be satisfactory.

The concentration of vegetable tinctures beyond a certain limit, by the use of heat (even *in vacuo?*), tends directly to the injury of the same, as well as to unnecessary expense and difficulty in the process. No one who has prepared officinal fluid extracts can doubt that this *limit* has been passed, yet no advocate for the present strength has proposed to dispense with partial evaporation, nor can it be otherwise.

The larger dose which will be required if the strength is reduced, may be named as an objection, but it has, in most instances, no value. The dose, as at present made, will vary with the drug used, from one drop to a teaspoonful, but in all cases the dose, whatever it may be, is given diluted, and the quantity of *drug* being the same, the diluted dose will be no larger in one case than in the other. It may be urged that a larger quantity of alcohol will be given, but only in a few instances will the objection hold good, and in none to a mischievous extent. The use of glycerine and sugar, in many preparations, taking the place of a portion of the alcohol, forming far more palatable vehicles, and when it is kept in mind, as it should be, that the majority of fluid extracts sold scarcely exceed this reduced strength, these fancied objections vanish, as the dose, in most instances, will not be increased noticeably, if at all, as any prescription file will demonstrate.

No apothecary who dispenses officinal fluid extracts can have failed, occasionally, to find himself in difficulty from the dangerous doses prescribed of veratrum, conium, hyoscyamus or belladonna (the prescription being based upon the use of commercial preparations).

It may be said that the physician is at fault, but that does not

relieve the difficulty in the least; such has been, and such will be the case so long as this difference exists. It may be further urged that all this class of fluid extracts (the narcotic) are far more concentrated than is desirable, either for the physician or the pharmacist.

There is an old saying, that "if the mountain will not come to Mahomet, Mahomet must go to the mountain." In this case it may apply, and even at the risk of apparent concession, it may still be both prudent and right to concede, where it is evident folly and injury to insist.

The pharmacist will rarely, and the specialist will never, make their fluid extracts according to the present officinal formulas, nor by others involving similar objections, for evident reasons. Why not change the standard to one that each will faithfully observe, for similar reasons, *i. e.*, self-profit. All of the more powerful could be more safely used, be more uniform and more reliable, if made of the reduced strength, which, at least, would counterbalance any apparent objection in those less powerful; further, *all* the fluid extracts could be of uniform strength, including *cinchona* and *wild cherry*.

By following the proposed method of Mr. Bartlett, each pharmacist, no matter how limited his trade, could properly prepare his own fluid extracts, without needless loss of material, or unnecessary expense, a *desideratum* that no other method proposed will accomplish, yet of the greatest importance, both to the individual, and in its influence upon the progress of pharmacy.

Let us, by all means, have formulas for this very important class of preparations, which shall commend their use to the retail apothecary, and, in view of the near approach of the revision of the pharmacopœia, no time is so opportune as the present for agitating the question of what the standard strength and process shall be.

The following table illustrates the proper dose of nearly all of the fluid extracts (officinal strength) which are largely prescribed, except the cinchona and wild cherry, of which the strength will not be changed by the proposed reduction:

	16 *oz. to pint.*	8 *oz. to pint.*
Aconite	1 to 3 drops.	2 to 6 drops.
Belladonna	1 " 3 "	2 " 6 "
Blackberry	½ fl. drachm.	1 fl. drachm.
Black Cohosh	½ " "	1 " "
Buchu	½ " "	1 " "
Colchicum	5 to 10 drops.	10 to 20 drops.
Conium	5 " 10 "	10 " 20 "
Dandelion	1 fl. drachm.	2 fl. drachms.
Ergot	½ " "	1 " "
Gelsemium	5 to 10 drops.	10 to 20 drops.
Gentian	½ fl. drachm.	1 fl. drachm.
Henbane	10 to 15 drops.	20 to 30 drops.
Ipecac.	3 " 20 "	6 " 40 "
Jalap	½ fl. drachm.	1 fl. drachm.
Leptandra	½ " "	1 " "
Mandrake	½ " "	1 " "
Nux Vomica	3 to 10 drops.	6 to 20 drops.
Pink root	1 fl. drachm.	2 fl. drachms.
Rhubarb	10 to 30 drops.	20 to 60 drops.
Sarsaparilla.	½ to 1 drachm.	1 to 2 drachms.
Seneka	½ fl. drachm.	1 fl. drachm.
Senna	1 " "	2 " "
Stillingia	½ " "	1 " "
Valerian	½ to 1 drachm.	1 to 2 "
Veratrum Viride	2 to 4 drops.	4 " 8 drops.

It will be seen that in only five of the above examples, when reduced, a dose exceeding a teaspoonful will be required in ordinary cases, and in each of the five the alcoholic strength need not exceed that of dilute alcohol. In ten of those remaining the dose will range from 3 drops to 30; of those yet remaining the dose will average one fluid drachm.

Chicago, April, 1870.

—*Pharmacist, May*, 1870.

"CINCHO-QUININE."

Read before the California Pharmaceutical Society, March 14th, 1870.

By W. T. Wenzell, Chemist.

This is an article put into the market purporting to be manufactured by Jas. R. Nichols & Co., of Boston, under the above name; they claiming their preparation to fully represent all of

the alkaloids naturally contained in calisaya bark. A printed circular is also extensively circulated among physicians, entitled "The Chemistry of the Cinchona Barks," taken from the *Boston Journal of Chemistry*, the organ of the above mentioned firm, through whose pages their preparations are fully heralded. The circular commences with an array of glittering generalities on "Some of the Chemical Constituents of Calisaya Bark, and the Methods usually Employed in their Separation." We further notice a statement, which is unsupported by proof and medical authority, that all of the cinchona alkaloids possess equal febrifuge and tonic properties; and that quinia only acquired the rank of superiority as a febrifuge by reason of priority of discovery; a statement which is also incorrect, inasmuch as cinchona was discovered as early as 1810, by Gomez, whereas quinia was discovered ten years later, by Pelletier and Caventou. The "Cincho-Quinine" of Jas. R. Nichols & Co. is composed, according to their circular, of bark alkaloids, as follows: 1, Quinia; 2, Cinchonia; 3, Quinidia; 4, Cinchonidia; 5, other alkaloidal principles present in the bark.

The claims advanced as to its superiority over the sulphate of quinia are, namely: that "Cincho-Quinine" contains the whole of the active febrifuge and tonic principles of calisaya bark; that it exerts the full effects of sulphate of quinia in the same dose, without causing cerebral disturbances; that it is nearly tasteless, and less costly than sulphate of quinia. The dose of the preparation is left to the discretion of the physician with the direction that it may be administered in doses varying from five to thirty grains.

The apparent insolubility of the "Cincho-Quinine," its slight bitter taste and large medicinal dose, (30 grs.), have led me to investigate the true nature of the article presented. "Cincho-Quinine" is put up in imitation of sulphate of quinia, in ounce bottles. It appears in the form of white friable scales, which are almost tasteless, only a slight bitterness being perceptible. When placed upon reddened litmus paper, and a drop of alcohol added, the blue color of the litmus was promptly restored. It proved combustible without residue. When dissolved in water with the intervention of sulphuric acid, the solution tasted

analogous to one of sulphate of cinchonia, and the solution when strongly acidulated with the acid, possessed, in very slight degree only, the optical phenomena of fluorescence and epipolism. Dr. Bill's test of ferro-cyanide of potassium gave the known reaction for cinchonia. "Cincho-Quinine" was nearly insoluble in ether. Twenty grains of the preparation were dissolved in water with a sufficient quantity of sulphuric acid, and the solution subjected to Liebig's ether test, which dissolves quinia, quinicia and cinchonicia, also portions of quinidia and cinchonidia, if a large excess of ether be employed. The etherial solution thus obtained by successive washings with ether, left on evaporation and drying a solid residue weighing about half a grain, possessing alkaloidal properties. This residue when dissolved in dilute sulphuric acid and water, and treated with Brande's chlorine and ammonia test, will indicate by its green coloration the presence of quinia, quinidia and quinicia. The test responded in this instance affirmatively. In order to determine which of the alkaloids produced the coloration, one portion of the solution was tested for quinidia by Van Heijningen's test of oxalate of ammonia, and another portion was tested for quinidia by Dr. Vry's test of iodide of potassium, but both gave negative results. Therefore the alkaloid detected by Brande's test is quinicia, which was confirmed by the application of Herapath's optical and chemical tests of the iodo-sulphates of the cinchona alkaloids. One grain of the mixed alkaloids obtained by Liebig's test from "Cincho-Quinine" by thorough exhaustion with ether, was dissolved in a fluid drachm of water sufficiently acidulated with sulphuric acid. The solution was then mixed with an equal bulk of alcohol, the mixture warmed to about 100° Fahr. and treated successively with tincture of iodine. The several (7) precipitates which appeared on cooling were amorphous resinous substances soluble in alcohol, and did not exhibit in the least degree crystalline structures. The precipitates first obtained were reddish in appearance, analogous to the salt of iodo-sulphate of quinicia; the last precipitates possessed the purplish tint belonging to the iodo-sulphate of cinchonicia. The absence of all crystalline characteristics of iodo-sulphate salts thus obtained from the alkaloids extracted by ether from "Cin-

cho-Quinine" point conclusively to the absence of quinia, quinidia and cinchonidia in the sample under examination, and we can safely assert that "Cincho-Quinine" is in reality only cinchonia containing about two per cent. of quinicia and cinchonicia.

In reviewing the above experiments and results in connection with Jas. R. Nichols & Co.'s circular, we unhesitatingly arrive at the following conclusions:

"Cincho-Quinine," although having the advantage of being nearly tasteless, does not contain quinia, quinidia and cinchonidia, and therefore does not represent the whole of the active principles of the bark.

It cannot exert the full effects of sulphate of quinia in the same dose, inasmuch as the stated dose of "Cincho-Quinine" is from five to thirty grains.

Although "Cincho-Quinine" appears to cost less than sulphate of quinia, it does not follow that commercial "Cinchonia," sold at four times its value, is a desirable substitute for quinine in an economical point of view.

And, lastly, one very important principle should by no means be lost sight of, namely: that a physician should always know what he is prescribing, and therefore the substitution of a remedy of less efficiency and uncertain medicinal value, is altogether unwarrantable and often hazardous.—*Pacific Med. and Surg. Journ., April*, 1870.

ON THE EMPLOYMENT OF MEDICINAL HYDROCYANIC ACID.

By M. Donovan, M.R.I.A.

In prescribing hydrocyanic acid medical practitioners occasionally indicate what they believe to be a specific strength by directing "Scheele's acid" to be used in compounding their prescriptions. The practical effect is to cause some degree of doubt in the mind of the compounder, bound, as he is, to the provisions of the Pharmacopœia, on the one hand, and the instruction given by the prescriber, on the other.

In some establishments two denominations are to be found—one prepared according to B. P., the other according to the prevailing opinion that Scheele's acid should be of three-fold

strength. This is certainly an unsatisfactory and unsafe state of things.

In the first place, I think I am warranted in affirming that the illustrious Swedish chemist never promulgated any formula for the preparation of a medicinal hydrocyanic acid. I have carefully searched his essays, and his letters to Crell, as well as his treatise on "Air and Fire," and could find nothing but an account of prussic acid, with which he conducted certain chemical researches with a view of ascertaining its nature and effects on other substances, but not having the least reference to its employment as a medicine; nor were any medical effects at that time attributed to it. The acid he used was prepared from commercial Prussian blue, a substance of *variable composition, as he himself ascertained.* A mixture of commercial Prussian blue, red precipitate, and water was boiled; the filtered solution was presented to the action of iron filings and dilute sulphuric acid, the clear liquid thus produced, being decanted, was distilled, and one-fourth drawn off; a few grains of chalk were added, and the liquor was re-distilled into a receiver containing "*a little* water." The whole of what Scheele wrote on the subject is contained in his 21st essay.

Here we do not discover any care to produce hydrocyanic acid of such normal strength as would insure identity of power in the same dose, at all times, with different samples of the medicine. I conclude, therefore, that the name "Scheele's acid" is a misnomer, leading to misconception, and even to danger.

No doubt a formula for hydrocyanic acid was introduced into the Pharmacopœia of the United States (1820) under the name of Scheele's acid, prepared from the same materials as those used by Scheele, but in different proportions, by a different method, and with a different result. This I believe to be the origin of the name "Scheele's prussic acid." But, as observed by Jourdan, "la densite variable de l'acide hydrocyanique preparé suivant la methode de Scheele ne permet pas de l'appliquer aux usages de la medecine."

The acid prepared according to the British Pharmacopœia, as that authority informs us, contains, by weight of the solution,

2 per cent. of hydrocyanic acid; 100 grains of it precipitated with a solution of nitrate of silver yield 10 grains of dry cyanide of silver. The unauthorised hydrocyanic acid prepared in London as "Scheele's strength" contains 5 per cent. of real acid; 100 grains of it by weight should produce 25 grains of dry cyanide of silver when precipitated by solution of nitrate of silver. Thus, if five minims were intended as a dose for the former, the patient would practically have taken twelve minims if Scheele's strength were made use of. What the effect of such a dose might be, if repeated at intervals during the day, it is not for me to inquire. Of hydrocyanic acid, B. P., at the temperature of 60°, one drachm measure is equal to about 71 drops of the same acid dropped from an ordinary ounce bottle; hence, 12 minims would be equal to 14½ drops.

Some make light of a dose of three or four drops because they have known larger doses to prove harmless; but were they quite sure of the condition of the acid employed? It is to be kept in mind that concentrated hydrocyanic acid rapidly deteriorates, that even the dilute acid of the Pharmacopœia becomes weaker by age, and that the so-called Scheele's acid, being stronger than the latter, is still more liable to change; hence, from its very weakness, arises another source of danger. On this subject Professor W. Gregory has thus expressed himself: "The average dose (of the medical acid) safe for an adult is one or two drops. It is much used as a sedative and anodyne; but, unless its strength and dose be perfectly known, it is a dangerous remedy. Fatal accidents have occurred from prescriptions found, after experience, to act favorably, being made up in another place, or by the same druggsit with a fresh stock, this fresh stock being exactly of the standard strength, while the previous acid had lost so much by keeping that the dose had been of necessity increased. There, danger actually arose from a too weak acid having been used." ("Organic Chemisty," 4th edition, p. 75.)

In all cases it will occasionally be necessary to test the condition of the hydrocyanic acid employed by the volumetric method directed in the B. P. And it would still further conduce to the safe employment of this dangerous medicine if, in-

stead of directing "Scheele's acid," prescribers would, in every case, subjoin B. P. to their prescriptions; this would put an end to all uncertainty.—*The Med. Press and Circular, March*, 1870.

ON ARTIFICIAL FLAKE MANNA.

By Edward Histed.

After the reading of Mr. Hanbury's "Historical Notes on Manna," at the meeting of the Pharmaceutical Society of November 3d, 1869, a few remarks were made by some gentlemen present respecting the existence of an artificial manna, said to be a very good imitation of the genuine. Some weeks since I was fortunate enough to become possessed of a specimen of this substance which had been brought from Paris, and was much surprised at the clever manner in which it had been produced, and the great resemblance it bore to what it was intended to imitate.

The consumption of manna in this country being comparatively small, a factitious or adulterated form of the drug would scarcely be accepted by pharmaceutists; this may account for the artificial flake manna in question being so little known in England.

In the first volume of the Pharmaceutical Journal (1842) will be found a description of a spurious sort of manna having a singular resemblance to the genuine, but differing essentially in that it contained no mannite, but was mainly composed of sugar of fecula, or glucose.

The artificial flake manna, which I have made the subject of my experiments, is certainly something better than this; yet, though one may hesitate to stigmatize it as spurious, there can be no question it is intended to deceive, it being, according to the printed circular which is sold with it, manna of inferior quality which has been purified and made to assume the form of the large stalactitic pieces which constitute the most esteemed form of the drug. The printed circular accompanying each parcel, in fact, alleges that it consists entirely of natural manna, and that it is free from sugar, starch, jalap, scammony, or other foreign substance; that it differs only from natural manna in not being contaminated with slight impurities, such as particles of wood,

bark, and leaves, which are always found in the latter; and, finally, that it has precisely the same medicinal action as natural flake manna.

A cursory glance at this fictitious flake manna would lead to the conclusion of its being the finest natural flake manna, from which, indeed, the public would not readily distinguish it, but closer inspection reveals certain obvious differences. When broken, no crystals of mannite are to be seen in the interstices; there is an absence of the peculiar bitter taste and of the odor characteristic of good manna; the fictitious manna is cleaner, lighter, more uniform in color, and more solid, than is usual with natural flake; it dissolves more readily in water, and makes a clearer solution, which, when shaken, does not form a permanent froth. If one part be added to four of rectified spirit of wine, and the mixture be boiled for a few minutes, a residue, resembling clarified honey, will be obtained, whereas natural manna treated in the same way leaves a hard substance in irregular masses.

The fictitious flake manna afforded me about 40 per cent. of mannite; natural manna in fine stalactites, treated in precisely the same method, yielded about 70 per cent.

The crystals obtained by alcohol were identical, whether the artificial or natural drug were employed.

27, *Haymarket.*

—*Pharm. Journ., Lond., April*, 1870.

SIMPLE APPARATUS FOR RAPID EVAPORIZATION AT LIMITED HEAT, UNDER REDUCED PRESSURE, WITHOUT THE USE OF A PUMP.

By A. B. Prescott,

Assistant Professor of Chemistry, etc., University of Michigan, U. S.

The pump is not always at hand; its use is forbidden for transmission of corrosive vapors; and, moreover, the removal of liquids, in form of vapor, against the weight of the air by muscular power is liable to "exhaust" the operator more effectively than it does the material. I desire to ask attention to some uses of ordinary distilling apparatus, for the production and maintenance of approximate vacuum over liquids during their vapori-

zation, in cases where the heat of 120° to 150° F. may be applied.

It is necessary that the distilling apparatus be made capable of air-tight closure, and that the air be removed from it to begin with. Then the degree of exhaustion in the apparatus is in direct ratio to the rapidity of condensation of the vapor produced. And the rapidity of condensation is only limited by the degree and extent of refrigeration employed, with a given extent of evaporating surface at a stated temperature. The air in the apparatus, to begin with, may be expelled through a suitable aperture by steam, which may be generated in the "receiver" of the apparatus or in an attachment thereto.

Take two round-bottomed glass flasks, the one having a capacity four to eight times greater than the other. Adjust the smaller upon a water-bath, the larger at 10 to 15 inches distance from the other, over a sink or large basin, and connect the two with glass tubing and perforated caoutchouc stoppers, so that the connecting tube shall incline slightly downward from its bend close to the stopper of the small flask. The stopper of the small flask is also to have a second perforation, in which is fitted a straight glass tube, 2 or 3 inches long, its lower end placed even with the lower end of the stopper. The upper end of this tube is very slightly drawn out for a ¼ of an inch, and snugly fitted with 1½ inch of firm rubber tubing, the upper ½ inch of which is closed with a piece of glass rod of same diameter as the body of the tube.

Now, put an ounce or two of water in the large flask, and the material to be evaporated in the small flask; close the stoppers perfectly, by turning the flasks under them, and leave open the straight tube. Apply, by the water-bath, the limited degree of heat until it is imparted to the contents of the small flask; then move a lamp under the large flask until the water in it has boiled briskly and the steam therefrom has escaped continuously from the straight tube for some minutes. Now close the straight tube with its caoutchouc cap, at the same time removing the lamp from the large flask. When the latter has cooled somewhat, wrap it smoothly with linen netting or gauze, and lead upon it a minute stream of cold water, controlling the same as required. The

liquid in the small flask boils briskly (if aqueous, boiling at 120° or 150° F.), and the refrigeration is governed to prevent too violent ebullition, lest liquid be thrown into the connecting tube; the degree of applied heat is governed to the same end.

An ordinary glass retort may be substituted for the small flask as an evaporating vessel, and its tubule may be fitted with a perforated stopper, admitting a thermometer. If there is not room in the stopper (of retort or flask) for both the thermometer and the steam-escape tube, the latter may be dispensed with by adjusting the stopper loose for escape of steam, and pressing it tight when the air is expelled. Flat-bottomed flasks favor equable boiling, but they are liable to collapse.

As a *condenser*, I have used, instead of the large flask, a copper vessel, for more ready application of heat without danger of breaking, and for more efficient refrigeration. This copper receiver is made of conical shape, with rounded bottom, a vertical diameter twice its horizontal diameter, and a neck bent to the angle of about 56° with the vertical axis of the vessel. The diameter of the neck is $\frac{3}{4}$ of an inch, to receive a retort beak, the joint being covered with a section of caoutchouc tubing. Or it may be fitted with a perforated stopper, to receive the connecting tube of the flask when evaporation is conducted in the latter.

With linen netting to spread the water over the free surface of the condensers, the evaporation therefrom refrigerates with a comparatively small supply of water. Using a copper condenser of the above described shape, a vertical diameter of 12 inches, and capacity of six pints, attached to an 8-ounce glass retort containing distillation promoters, I have vaporized 4 fluidounces of water in sixteen minutes at the constant temperature of 128° F. By ordinary care in the expulsion of air and closure of the apparatus, exhaustion can be invariably secured, fixing the water-boiling point at below 130° F.; that is, atmospheric pressure equal to at least 25 inches of mercury may be removed and sustained by availing ourselves of the displacing effect of steam, and the contraction of condensing vapor, in very simple apparatus.

Notwithstanding the illustrations of vacuum by condensation,

which abound upon the physical lecture table, I do not know whether the devices suggested in this note have been tried or proposed for small chemical operations by any one else.* I have recommended them to students, and we have found them satis factory for various analytical, experimental, and pharmaceutical operations. We have employed them chiefly in such evaporations as are performed for the residue only, or, at least, not for quantitative recovery of the distillate, in various evaporations of quantitative analysis, in the elimination of non-volatile alkaloids, in determining the organic matter in water, and in preparing fluid extracts. To evaporate at ordinary temperatures by hand-pump exhaustion is especially irksome in those cases when application of 125° to 150° F. is objectionable. And to connect a vessel under which heat may be applied with the air-pump involves quite as much labor as the arrangement of apparatus for exhaustion by condensation.—*American Supplement to Chem. News, New York, Jan.*, 1870.

ON THE ACTION OF SUNLIGHT ON SULPHUROUS ACID.

By O. Loew,

Assistant in the College of the City of New York.

(Read before the "Lyceum of Natural Science," New York.)

We know that plants under the influence of the sunlight reduce carbonic acid and water to organic compounds, and organized parts; we know further, that the albuminous principles, as well as some ethereal vegetable oils, contain sulphur which doubtless comes from the sulphates contained in the soil. As regards this reduction of sulphuric acid, it seemed to me of interest to ascertain whether sunlight possesses any reducing power upon the oxygen compounds of sulphur out of the tissues of the plant. For this purpose I exposed diluted sulphuric acid, solutions of sulphates and sulphites and aqueous sulphurous acid under various conditions, in sealed tubes to the sunlight during the last summer.

* This method of producing a partial vacuum was employed by Barry (See U. S. Dispensatory—Evaporation of Extracts) more than forty years ago in making extracts and volatile oils.—Editor Amer. Jour. Pharm.

It was only with the sulphurous acid that any change was noticed. The tubes containing this substance *remained clear during two months*, but after that time a disturbance set in which slowly increased, and sulphur was deposited in a finely divided state.

The sulphurous acid was thus gradually reduced to sulphur, but the oxygen was not liberated, another part of the acid having been oxydized by it to sulphuric acid. It seems very singular that a space of two months elapsed before any change was observed; it appears that the absorption of a great amount of light was necessary for the separation of the first atom of sulphur, which was followed then by more atoms in much shorter intervals of time.—*Amer. Jour. Science and Arts.*

New York, December, 1869.

ON THE TECHNICAL ANALYSIS OF SOAP.*

By M. Gaston Tissandier.

The name of soap is given to true salts, formed by combining fatty acids (oleic, margaric,) with alkalies, such as soda or potash. The quality of a soap is ascertained by determining the proportion of fatty acid and alkali which it contains, and also the foreign substances—such as chlorides, alkaline sulphates, moisture, &c.—which always occur in varying proportions.

Fatty Acids.—Dissolve 5 grms. of the soap in question in ½ a litre of distilled water, heated in a porcelain capsule; when dissolved, add a slight excess of dilute sulphuric acid, and let it boil for some minutes, so that the fatty acids may become separated and float upon the liquid. To weigh the fatty acids, cool them, and they will form a cake of grease, which must then be fused, in order to dry them, in a small tared porcelain capsule; this capsule, when again weighed, will give the amount of fatty acids corresponding to 5 grms. of soap.

Wax may also be used to facilitate the weighing. After the first part of the operation has been performed, and the fatty acids are floating, add 7 grms. of white wax, which will melt

* Moniteur Scientifique.

and mingle with them; cool the whole, take out the cake of wax, and weigh it, previously drying it between double filtering papers. The excess of weight gives the proportion of fatty acids.

Ash—Soda.—Calcine, at red heat, 5 grms. of soap in a platinum capsule. Weigh the ash thus obtained, and dissolve it in 200 c.c. of distilled water; determine the proportion of soda in 100 c.c. by means of normal sulphuric acid (alkalimetric standard), evaporate to dryness, and notice the action of bichloride of platinum upon the residue dissolved in water, to ascertain whether it consists of potash or soda. The estimation of the soda may be verified by directly taking the alkalimetric standard of the soap (5 grs.).

Chloride of Sodium.—Estimate the chlorine in 50 c.c. of the solution with the standard silver solution.

Sulphate of Soda.—The sulphuric acid is estimated in the remaining 50 c.c. of the solution with chloride of barium.

Non-Saponified Fatty Bodies.—These also occur in soap, and may be detected as follows: Dry 5 grms. of soap at 110°, after which treat it with common ether. Agitate it with that liquid in a flask, filter it, wash with ether, and evaporate the solution at 100°; the residue will be the non-saponified fatty bodies. The ether may, perhaps, dissolve a little of the soap; it must, therefore, be ascertained that the residue is really fat—melt it, and try whether it will soil glazed paper.

Non-Saponified Carbonate of Soda.—Cut 5 grms. of soap into small fragments, and treat them with boiling alcohol, which does not dissolve carbonate of soda. Filter, and treat the insoluble residue with alcoholic acetic acid, which dissolves the carbonate of soda without acting on the sulphate of soda and chloride of sodium. The acetic solution, evaporated to dryness and calcined, leaves, as a residue, carbonate of soda. Weigh it, and, if verification be required, take its alkalimetric standard.

Glycerin.—Dissolve 5 grms. of soap in boiling water, decompose it with dilute sulphuric acid, and separate the isolated fatty acids by decantation. The liquid, which is completely neutralised by the carbonate of soda, is now evaporated to dryness

over a water-bath at 100° C.; the residue, composed of sulphate of soda and glycerin, is taken up by alcohol, which dissolves only the latter; it is then filtered and evaporated to dryness, when the residue will be glycerin. This is again taken up by alcohol, re-evaporated, and the residue again weighed, after ascertaining that it possesses all the properties of glycerin.

Water.—Cut the soap into thin slices; weigh 5 grms., and dry them on a stove at 120° C.

COMPOSITION OF VARIOUS KINDS OF SOAP.

Substances estimated.	I.	II.	III.	IV.
Water,	46·12	24·76	17·55	14·09
Soda,	4·98	7·30	8·48	9·01
Fatty acids,	37·99	64·50	71·45	74·68
Chloride of sodium,	6·30	3·12	2·12	2·00
Sulphate of soda,	0·72	0·32	0·40	0·22
Fatty bodies,	1·00	—	—	—
Glycerin,	2·89	—	—	—
Total,	100·00	100·00	100·00	100·00

[*Chemical News, London, Feb.* 4, 1870.

ON CHRYSOPHANIC ACID.

By Dr. Rochleder.

After referring at some length to the labors of many chemists, as well as those made by himself on this subject some years ago, the author enters into a discussion on the statements made by MM. Graebe and Liebermann respecting the composition of chrysophanic acid, and then says, that he has taken the trouble to prepare this acid in pure state from rheine, as prepared by Dr. Marquardt, at Bonn; this substance consists mainly of chrysophanic acid, emodine, and impurities; the composition of pure emodine dried at 100° is, in 100 parts, C, 65·75; H, 4·29; O, 30·18; formula: $C_{40}H_{30}O_{13}$; the formula which Messrs. Graebe and Liebermann give for chrysophanic acid, viz., $C_{14}H_8O_4$, cannot, according to the author of this paper, be the correct one, and this the less so, as no less than six different chemists have found for the formulæ of this substance, prepared from different sources and at various periods, the formula, $C_{56}H_{42}O_{17}=4$

$(C_{14}H_{10}O_4)+H_2O$, because the H_2O of crystallization is only driven off at 115°; it should be kept in view that emodine is very difficult to separate from chrysophanic acid, and M. Rochleder suspects that the statements of Messrs. Graebe and Leibermann about the action of pulverized zinc upon chrysophanic acid are vitiated by the presence of emodine in the acid used for these experiments.—*Chemical News, London, Jan.* 7, 1870.

METALLIC HYDROGEN.

At a recent meeting of the Lyceum of Natural History, in New York, a paper was read by Dr. Loew, assistant in the College of New York, "On the Preparation of Hydrogen Amalgam."

The researches of Graham went to show that hydrogen could be alloyed with palladium, and that it was also contained in meteoric iron. He condensed the hydrogen in the palladium, and came nearer proving its metallic character than any other person had done. Schoenbein in his search for ozone, found a method for making the peroxide of hydrogen, which brought him to the very threshold of discovering hydrogenium. Schoenbein's experiment was this—An amalgam of zinc and mercury is violently agitated in water; the water is then filtered, and, on being examined with iodide of starch and protosulphate of iron, will be found to contain peroxide of hydrogen or oxygenated water. Dr. Loew has carried the investigation further, and has, instead of oxidising the hydrogen, succeeded in combining it with the mercury. He takes an amalgam composed of not more than 3 or 4 per cent. of zinc, and shakes it with a solution of bichloride of platinum; the liquid becomes black, and a dark powder settles to the bottom. The contents of the flask are then thrown into water, and hydrochloric acid added to dissolve the excess of zinc. The amalgam of hydrogen and mercury at once forms in a brilliant voluminous mass, resembling in every way the well-known ammonium amalgam. It is soft and spongy, and rapidly decomposes, but without any smell of ammonia. The hydrogen escapes, and soon nothing but pure mercury is left in the dish. The experiment appears to show conclusively that an amalgam of

hydrogen and mercury can be formed, and that hydrogen is really a metal. It would also throw some doubt upon the existence of the amalgam of ammonium and mercury, and offer an explanation of that compound on the basis of its being the same amalgam of hydrogen and mercury that is prepared in the way now pointed out by Dr. Loew. The smell of escaping ammonia must be traced to some other source than the existence of that radical in combination with mercury.—*Chem. News, Lond., May 13th, 1870, from Scientific American.*

NICKEL LINNÆITE.

To the Editor of the Journal of the Franklin Institute:

Sir,—The valuable metal, nickel, now employed extensively in preparing various alloys resembling silver, for table use, and in making the coins of the United States and other countries, has been but seldom found in this country. In small but not paying quantities, there are several localities of it; and the only one which promises to yield it in abundance is the deposit of Mine la Motte, Missouri, so celebrated already for its copper, lead, iron, and other ores. A specimen of nickel linnæite or siegenite has been received at the Geological and Mineralogical Cabinet of the General Land Office, yielding over 30 per cent. of nickel. Nickel was discovered in 1751, by Cronstedt, in Sweden. It is a metal of a color not much differing from that of silver; it is magnetic, soft, and malleable; may be forged, rolled, bored, drawn into wire, &c.; it is more tenacious than iron, and less subject to oxidation than silver. In the year 1824 (the statement may yet be found in Thenard's *Traite de Chemie*), it was stated that the metal, nickel, could not be put to any use. However, it was long before this that nickel was employed by the Chinese for the preparations of an alloy termed by them "Packfong;" and, although, in 1776, Englestroem had analyzed this composition, no practical application of this metal was made for some time.

The separation of nickel from its ores is exceedingly difficult and complicated. The crude material is the cobalt speiss and the matt obtained in lead and copper smelting works. In order

to free this material from arsenic and sulphur, it is first finely pulverized and roasted with pulverized coal. The residue is dissolved in muriatic acid, and the solution diluted with much water in order to separate the bismuth. If the liquid is now mixed with hypochlorite of lime, the iron is oxidised to a peroxide, when it may be precipitated with the arsenic acid existing in the liquid. If the liquid is to be freed from copper, a current of hydrogen is conveyed through the same, and, having separated the precipitate produced, the cobalt is thrown down by hypochlorite of lime. Now the nickel may be separated with milk of lime. In subjecting the precipitate, with carbon, to a red heat, the metal may be obtained in its pure state. The manufacture of "Packfong" in Europe is not of a very old date. The term is synonymous with argentum, German-silver, British-plate. Its composition varies considerably, as may be seen from the following table:

	I.	II.	III.	IV.	V.	VI.
Copper	88·00	65·0	43·8	40·4	55·0	50·0
Nickel	8·75	16·8	15·6	31·6	20·0	25·0
Zinc	—	13·0	40·6	25·4	25·0	25·0
Iron	1·75	3·4	—	2·6	—	—
	98·50	98·2	100·0	100·0	100·0	100·0

It may be seen from this that an alloy may be made with less than 10 per cent. of nickel; but the wearing quality of the metal is decidedly injured by too great a reduction in the quality of nickel.

I will remark that No. 1 is the so-called "white copper," made in Suhl, Germany, a century ago, with copper ores containing nickel, and analyzed by Brandes. No. 2 is an alloy, made at Paris, which is capable of receiving a fine polish or gilding. Nos. 3 and 4 are Chinese packfong. No. 5 is an alloy as used for knife handles. No. 6 is adapted for forks. The nickel coins of Switzerland, which have been in use in that country since 1850, consist of an alloy of nickel, copper, zinc, and silver. The proportion of nickel and zinc in the 20, 10, and 5 centimes pieces is 1·25. While the amount of copper increases with the decreasing value of the coin, the quantity of silver, on the other hand, decreases with the smaller value. Th

United States' coins now in general circulation contain 88 per cent. of copper and 12 per cent. of nickel.

A. R. ROESSLER,
Geologist, General Land Office, Washington.

Jan. 20, 1870. —*Journ. Franklin Institute, Feb.*, 1870.

ON FILTERED AIR.

BY PROFESSOR TYNDALL, F.R.S.*

The theory of disease was never discussed with more earnestness, or with greater precision, than at the present time. The exact methods pursued in physics and chemistry, both as regards reasoning and experiment, are making their influence felt in medicine and surgery; and they promise, while assigning but narrow limits to our present accurate knowledge, to insure its healthy growth. It is, I think, of capital importance to mark each successive step by which that knowledge is surely and certainly augmented; to detach from the domain of vagueness and uncertainty each successive fragment of demonstrated truth. Now, if the published *data* be correct, it seems to me that such a step has been recently taken with reference to the germ theory of the putrefaction of wounds, and that the evidence in favor of that theory amounts to a physical demonstration of its truth. This result and its basis I propose here to describe and define.

The entrance of air into a wound is the dread of the surgeon. When an abscess is opened he must prevent the air from mingling with the blood-clots if he would avoid putrefaction and its teeming accompaniment of animalcule life. Some eminent London surgeons inform me that they never squeeze an abscess, lest when the pressure is relaxed the air should be sucked in. Now, whence this dreaded power? Is it the air itself that causes putrefaction, or is it something carried mechanically by the air? A follower of Gay-Lussac would affirm the former; a heterogenist would refer the animalcules to "spontaneous generation;" a holder of the germ theory would ascribe the putrefaction to seeds or eggs floating in the atmosphere, and which, when sown upon the wound, sprout into this crop of minute organisms. Do

* Contributed to the *Times*, April 7.

any *data* exist which will enable us to say, with certainty, which party is right? I think so.

It would be very difficult to reduce the putrefying power of pure air, even if it existed, to absolute demonstration; for, however cleansed in appearance, a stubborn objector might still urge that the air was not cleansed in reality; that germs exist, though they baffle our attempts to reveal them. But this difficulty does not hamper the other side; for if, notwithstanding the risk of these residual germs, *visibly pure air* can be proved incompetent to produce the phenomena of putrefaction, there is no escape from the inference that, as regards the point to be decided, such air is perfectly filtered; and its proved impotence would be a demonstration of the truth of the germ theory. By "visibly pure air" I mean air which, where traversed by a powerful and intensely concentrated beam of light, in a space not otherwise illuminated, reveals no trace of floating matter to the eye.

How, then, are we to obtain our filtered air, and, having obtained it, how are we to apply it to a wound and mix it effectually with the blood? Two or three years ago an observation and an inference, which, taken together, reflect the highest credit on his sagacity, were made and drawn by Professor Joseph Lister, of Edinburgh. He found, and I believe it is the universal experience of surgery to find, that when the lung is wounded by the spike of a broken rib, air from the pleural cavity may mingle freely with the blood, but that putrefaction never ensues. Here is the statement of Professor Lister, abbreviated, but in his own words:—

"I have explained to my own mind the remarkable fact that in simple fractures of the ribs, if the lung be penetrated by a fragment, the blood effused into the pleural cavity, though freely mixed with air, undergoes no decomposition. The air is sometimes pumped into the pleural cavity in such abundance that, making its way through the wound, it inflates the cellular tissues of the whole body. Yet this occasions (as regards putrefaction) no alarm to the surgeon. Why air introduced into the pleural cavity through a wounded lung should have such wholly different effects from that entering through a permanently open wound penetrating from without, was to me a complete mystery till I heard of the germ theory of putrefaction, when it at once occurred to me that it was only natural that the air should be filtered of germs by the air passages, one of whose offices is to arrest inhaled particles of dust, and prevent them

from entering the air-cells. In truth, this fact in practical surgery, when duly considered, affords as good evidence in support of the germ theory of putrefaction as any experiment that can be performed artificially.*

Here is a surmise which bears upon it the mark of genius, but which nevertheless needs verification. If in the place of the words "it is only natural," we were authorized to write "it is perfectly certain," the demonstration would be complete. Now, this is exactly what experiments with a beam of light enable us to do. One evening towards the close of last year, while pouring various gases across the dust track of a beam in the laboratory of the Royal Institution, the thought occurred to me of displacing by my breath the illuminated dust. I then noticed, for the first time, the extraordinary darkness produced by the air expired towards the end of an expiration. By an intentional effort of expulsion the lungs may be far more effectually emptied of air than by ordinary respiration; and by such an effort, which discharges the air from the interior portion of the lungs into the beam, the darkness is changed to absolute blackness. There is no speck or mote of any kind in such air. It is a true elastic fluid, without a trace of cloud or floating matter.

Thus, by ocular evidence we prove the filtering power of the lungs, and by the experience of surgery we prove the incompetence of air so filtered to produce putrefaction. The germs removed by the process of filtration are therefore the cause of the putrefaction, and its associated phenomena of animalcule life, which was to be demonstrated.

As a guide to the practical surgeon the establishment of this fact is plainly of the very highest importance. Professor Lister now avails himself of the filtering power of cotton wool in treating a numerous class of wounds. He first destroys the germs adherent to the wool, and by a proper lotion he kills those which may be scattered on the flesh. The cleansed wool placed upon the wound permits of a free diffusion of the air, but entirely intercepts the germs, and thus keeps the blood perfectly sweet. It is essential that no matter from the wound should reach the outside air, for such matter would open a highway for the animalcules. I may add that when the foregoing observations on

* *British Medical Journal*, 1868, p. 56.

the filtering power of the lungs were made I had no thought, and but little knowledge, of the germ theory. Their value as evidence is enhanced by the consideration that they are absolutely independent of all theoretic bias.*—*The Chem. and Drug., Lond., May* 14, 1870.

REPORT OF PROF. C. F. CHANDLER TO THE METROPOLITAN BOARD OF HEALTH.

Col. Emmons Clark,

Secretary Metropolitan Board of Health.

Sir:—In response to the resolution of the Board, directing "the Chemist to examine the various hair tonics, washes, cosmetics, and other toilet preparations in general use, and to report what ingredients, if any, they contain of a character injurious or dangerous to those who use them," I beg leave to submit the following report of the results thus far reached. My examination has been specially directed to the mineral poisons; no tests have been as yet made for vegetable or animal substances, as, for example, cantharides, which I have reason to believe is sometimes employed.

The articles which I have examined may be classed as:

I. Hair tonics, washes, and restoratives.
II. Lotions for the skin.
III. Enamels.
IV. White powders for the skin.

I. Hair Tonics, Washes, and Restoratives.

Of these sixteen have been examined, and, with but one exception, all have been found to contain lead, generally in the form of acetate or sugar of lead.

1. *Hoyt's Hiawatha Hair Restorative.* David Wright, Proprietor, 112 South Street, New York.

This is an ammoniacal solution of nitrate of silver, containing

*The black wreaths produced by placing the flame of a spirit lamp underneath the track of a sunbeam may now be clearly though imperfectly seen in every drawing-room in London. The light, save that passing through a single aperture, ought, as far as possible, to be excluded. A candle flame also shows the effect, but very imperfectly.

4·78 grains of the nitrate in one fluid ounce. It contains no other metals.

2. *Clark's Distilled Restorative for the Hair.* C. G. Clark & Co., Proprietors.

This preparation contains in one fluid ounce:

Lead in solution	0·11 grains.

3. *Chevalier's Life for the Hair.* Prepared by S. A. Chevalier, M.D., 1123 Broadway, New York.

One fluid ounce contains:

Lead in solution	0·22 grains.
Lead in the sediment . . .	0·80 "
Total lead	1·02 "

4. *Pearson & Co.'s Circassian Hair Rejuvenator.* J. S. Pearson & Co., 386 Jay street, Brooklyn, N. Y.

One fluid ounce contains:

Lead in solution	1·40 grains.
Lead in the sediment . . .	1·31 "
Total lead	2·71 "

5. *Ayer's Hair Vigor.* Prepared by J. C. Ayer & Co., Lowell, Mass.

One fluid ounce contains:

Lead in solution	2·81 grains.
Lead in the sediment . . .	0·08 "
Total lead	2·89 "

6. *Prof. Wood's Hair Restorative.* O. J. Wood & Co., 444 Broadway, New York.

One fluid ounce contains:

Lead in solution	2·93 grains.
Lead in the sediment . . .	0·15 "
Total lead	3·08 "

7. *The Hair Restorer of America.* Prepared by Dr. J. J. O'Brien, 202 East 30th street, New York.

One fluid ounce contains:

Lead in solution	3·28 grains.

8. *Gray's Celebrated Hair Restorative.* Day, Hoagland & Stiger, 54 Courtland street, New York.

One fluid ounce contains:

Lead in solution	a trace.
Lead in the sediment . . .	3·39 grains.
Total lead	3·39 "

9. *Phalon's Vitalia.* Prepared by Phalon & Son, 517 Broadway, New York.

Consists of two fluids in separate bottles.

No. 1 is a clear, pale yellow solution of hyposulphite of soda.

No. 2 is a clear, pale pink solution, containing in one fluid ounce:

Lead . . . . . 14·08 grains.

As, by the directions which accompany the package, the lead solution is to be diluted with twice its volume of the hyposulphite solution, the strength of the mixture would be reduced to one-third, when it would contain 4·69 grains of lead in one fluid ounce. Prof. Lawrence Reid, the manufacturers' chemist, claims that the hyposulphite of soda renders the lead harmless by ultimately forming with it an insoluble sulphide of lead, and in various other ways. But after carefully considering all his arguments, I am compelled to say that I cannot accept them as valid.

10. *Ring's Vegetable Ambrosia.* E. M. Tubbs & Co., Proprietors, Peterboro, N. H.

One fluid ounce contains:

Lead in the solution . . .	4·69 grains.
Lead in the sediment . . .	0·31 "
Total lead	5·00 "

11. *Mrs. S. A. Allen's World's Hair Restorer.* 198 and 200 Greenwich street, New York, and 266 High Holburn, London, England.

One fluid ounce contains:

Lead in solution	5·26 grains.
Lead in the sediment . . .	0·31 "
Total lead	5·57 "

12. *L. Knittel's Indian Hair Tonique.* Louis Knittel, 616 Eighth avenue, New York.

One fluid ounce contains:

Lead in solution	5·16 grains.
Lead in the sediment . . .	1·13 "
Total lead	6·29 "

13. *Hall's Vegetable Sicilian Hair Renewer.* R. P. Hall & Co., Nashua, N. H.

One fluid ounce contains:

Lead in solution	6·45 grains.
Lead in the sediment . . .	0·68 "
Total lead	7·13 "

14. *Dr. Tebbett's Physiological Hair Regenerator.* Tebbett Bros., Proprietors, Manchester, N. H.

One fluid ounce contains:

Lead in solution	6·82 grains.
Lead in the sediment . . .	0·62 "
Total lead	7·44 "

15. *Martha Washington's Hair Restorative.* Prepared by Simonds & Co., Fitzwilliam, N. H.

One fluid ounce contains:

Lead in solution	3·01 grains.
Lead in the sediment . . .	6·79 "
Total lead	9·80 "

16. *Singer's Hair Restorative.* Depot 643 Broadway, and 79 Nassau street, New York.

One fluid ounce contains:

Lead in solution	0·15 grains.
Lead in the sediment . . .	6·79 "
Total lead	16·39 "

Recapitulation.—Only one of this class of preparations is free from lead, which metal seems indeed to be the *essential constituent* in most cases. Most of the sediments observed in the bottles, and which require that the bottle "*be well shaken,*" etc., con-

sist of sulphur, which it is intended shall ultimately unite with the lead to produce the dark-colored sulphide of lead, or, as one of the manufacturers has it, "*the original youthful beauty and color.*" The following tabular statement shows how the poisonous hair nostrums compare among themselves:

Grains of Lead in one fluid ounce.

1. Clark's Distilled Restorative for the Hair	0·11
2. Chevalier's Life for the Hair	1·02
3. Circassian Hair Rejuvenator	2·71
4. Ayer's Hair Vigor	2·89
5. Prof. Wood's Hair Restorative	3·08
6. Dr. J. J. O'Brien's Hair Restorer of America	3·28
7. Gray's Celebrated Hair Restorative	3·39
8. Phalon's Vitalia	4·69
9. Ring's Vegetable Ambrosia	5·00
10. Mrs. S. A. Allen's World's Hair Restorer	5·57
11. L. Knittel's Indian Hair Tonique	6·29
12. Hall's Vegetable Sicilian Hair Renewer	7·13
13. Dr. Tebbett's Physiological Hair Regenerator	7·44
14. Martha Washington's Hair Restorative	9·80
15. Singer's Hair Restorative	16·39

II. LOTIONS OR WASHES FOR THE COMPLEXION.

1. *Burnett's Kalliston.* Joseph Burnett & Co., Boston, Mass. Contains no injurious metals.

2. *Phalon's Paphian Lotion, or Floral Beautifier.* Phalon & Son, 517 Broadway, New York. Contains no injurious metals.

3. *Enamel of America.* François Gregoire & Co., cor. of Eighth and Locust streets, Phila. A clear, colorless liquid, containing no injurious metals.

4. *Email de Paris, de Jared.* Jared et Renf, Paris. A pink alcoholic liquid, free from injurious metals.

5. *Balm of a Thousand Flowers.* A thick yellow emulsion, free from injurious metals.

6. *Perry's Moth and Freckle Lotion.* Dr. B. C. Perry, 49 Bond street, New York.

A colorless liquid, with a little white sediment.

One fluid ounce contains:

Mercury in solution . . . 2·67 grains.
Zinc " " . . . 0·99 "
Equivalent to—
Corrosive sublimate . . . 3·61 "
Sulphate of zinc (crystallized) . 4·25 "

The sediment contains a little mercury, lead, and bismuth.

Recapitulation.—With the exception of Perry's Moth and Freckle Lotion, these lotions are entirely free from lead or other injurious metals.

III. Enamels for the skin.

1. *Balm of White Lilies, for preserving and beautifying the skin.* H. A. Hoadley, New York.

Water colored pink, and holding in suspension a large amount of carbonate of lime. It does not contain any injurious metals.

2. *Dr. Bradford's Enameline for the Complexion.*

A colorless liquid, holding 33·02 grains of oxide of zinc in suspension in each fluid ounce. Is free from lead.

3. *Hagan's Magnolia Balm.* Demas Barnes & Co., New York.

A colorless liquid, holding in suspension in each fluid ounce 118·61 grains of oxide of zinc. Is free from lead.

4. *Laird's Bloom of Youth, or Liquid Pearl.* Geo. W. Laird, 74 Fulton street, New York.

A colorless liquid, holding in suspension in each fluid ounce 169 grains of oxide of zinc. It is entirely free from lead.

5. *Eugénie's Favorite.* M'lles T. & L. Jouvin, late of Rue St. Anne, Paris.

A colorless solution, holding in suspension in each fluid ounce 140·52 grains of carbonate of lead, *white lead*, containing 108·94 grains of metallic lead. There is a trace of lead dissolved in the liquid.

6. *Snow-white Enamel, for Whitening and Beautifying the Complexion.* Phalon & Sons, 517 Broadway, New York.

A colorless liquid, holding in suspension in each fluid ounce 186·67 grains of carbonate of lead, equivalent to

Metallic lead in sediment. . .	144·72 grains.
Lead in solution . . .	1·56 "
Total lead	146·28 "

7. *Snow-white Oriental Cream, for Whitening and Beautifying the Complexion.* Phalon & Sons, 517 Broadway New York.

A colorless liquid, holding in suspension in each fluid ounce 246 grains of carbonate of lead; equivalent to

Lead in suspension . . .	190·22 grains.
Lead in solution . . .	0·77 "
Total lead	190·99 "

Recapitulation. The Enamels consist of white powders suspended in clear liquids; on standing the powders subside, but agitation quickly incorporates them with the liquids again. The following contain lead, mostly, if not entirely, in the form of *carbonate;* they are therefore simply "white lead" ground in water.

Grains of lead in one fluid ounce after shaking.

Eugénie's Favorite	108·94 grains.
Phalon's Snow-white Enamel	146·28 "
Phalon's Snow-white Oriental Cream . .	190·99 "

IV. White Powders for the Skin.

1. *John Irvine's Compound Chinese Tablet of Alabaster* consists of carbonate of lime, free from injurious metals.

2. *Shand's Compound Chinese Tablet of Alabaster* consists of carbonate of lime, free from injurious metals.

3. *Superior Lily White*, X. Bazin, Philadelphia, consists of carbonate of lime and carbonate of magnesia, free from injurious metals.

4. *Cascarilla de Caracol de Persia*, R. & C. A. Wright, Philadelphia, consists of carbonate of lime, and some earthy matter insoluble in acids, either clay or "French chalk;" is free from injurious metals.

5. *The Original Tablet of Alabaster, or Lily White Cosmetic*, consists of carbonate of lime, with some clay or "French chalk;" is free from injurious metals.

6. *Bismuth Powder for Beautifying the Skin and removing Freckles* consists of carbonate of lime, with much clay or "French chalk;" is free from injurious metals.

7. *Lavel's Lily White and Rose Bloom* consists of clay or "French chalk;" is free from injurious metals.

Recapitulation.—The white powders consist of carbonate of lime, carbonate of magnesia, clay, or "French chalk;" either singly or mixed. Nothing injurious was detected in any one of them.

Conclusion.—It appears from the foregoing:—

1. The *Hair Tonics, Washes* and *Restoratives* contain lead in considerable quantities; that they owe their action to this metal, and that they are consequently highly dangerous to the health of persons using them.

2. With a single exception, Perry's Moth and Freckle Lotion, which contains corrosive sublimate, the *Lotions* for the skin are free from lead and other injurious metals.

3. That the *Enamels* are composed of either carbonate of lime, oxide of zinc, or carbonate of lead, suspended in water. The first two classes of enamels are comparatively harmless, as harmless as any other white dirt when plastered over the skin to close the pores and prevent its healthy action. On the other hand, the enamels composed of carbonate of lead are highly dangerous, and their use is very certain to produce disastrous results to those who patronize them.

4. The white powders for the skin are harmless, except in so far as their application may interfere with the healthy action of the skin.

Respectfully submitted,

C. F. CHANDLER, Ph.D.

Chemist to the Metropolitan Board of Health.

ON BENZOIC ACID AND GUM BENZOIN.

By JULIUS LÖWE.

The contents of this paper are the answers given to four queries, viz.:—(1) Does benzoic acid pre-exist in gum-benzoin ready-formed and in free state? (2) Is the benzoic acid present in the resin combined with a base? (3) Is benzoic acid a pro-

duct of the oxidation of a part of the resin formed by the taking up of oxygen during the melting of the resin? (4) Is benzoic acid a product of a portion of the resin formed by the heat of the fusion of that substance? The author's experiments, detailed at great length, commenced with the finding of a reply to No. 3, and the result is a negative—viz., that when the process of sublimation (as usually employed for obtaining benzoic acid from gum benzoin) is carried on in atmospheres of hydrogen or carbonic acid gas, the quantity and quality of the acid obtained are the same as when the process is carried on in contact with air. As regards the replies to Nos. 1, 2, and 4, a series of experiments made in various ways proved, undoubtedly, the pre-existence of ready-formed benzoic acid in the resin. The last portion of this paper is devoted to the very minutely detailed description of the best practical method of the preparation of benzoic acid from the resin.—*Chem. News, Lond., March* 25, 1870.

CHEMICAL CONSTITUENTS OF THE ASPARAGUS BERRIES.

By H. Reinsch.

Our readers are all acquainted with the vegetable known as asparagus; they also know that, when this plant comes to full development towards the latter end of the summer, it produces berries of the size of medium green peas, of dark red color, and a waxy appearance. The author has instituted some experiments, and investigated the nature of these berries, which enclose four black-colored, somewhat angular-shaped, internally greenish seeds, made up of a horny material, like raw coffee, but far more tough than the latter, because, after drying, the asparagus seeds cannot be pulverized in a mortar. The author has collected a sufficient quantity of the berries to try whether the seeds might be used as a substitute for coffee. For this purpose the berries are bruised, and left to ferment for some days. The seeds are separated from the pulpy mass by means of a sieve; next washed with water; dried and roasted in the same way as coffee. The author made a mixture of equal parts of coffee and asparagus seeds, which, after roasting, was not, when infused with boiling-water, in the least distinguishable from ex-

cellent coffee. The berries contain a large amount of glucose (grape sugar), and may, consequently, be used for the production of spirits, after fermentation. Of far more importance, however, may be a substance which the author has discovered in the berries,—viz., the pigment contained therein, and named spargancine—a yellowish red coloring matter, soluble in alcohol and ether, and yielding, with salts of lead and alumina, yellow-colored pigments. The author's researches on this subject are not complete, owing to want of sufficient raw material. As regards the horny seeds they contain oil, grape sugar, a peculiarly bitter principle, spargine, some resin, and a coloring matter. It appears that the crop of asparagus berries (at least, in the neighborhood of Nürnberg, Bavaria, where the author resides) is very large; a single plant yielded more than ½ lb. of berries.—*Chem. News, Lond., May* 6, 1870.

A NEW CHLORAL.

Dr. Hofmann, who was present at the last meeting of the Chemical Society, related some interesting facts connected with the manufacture of chloral in Berlin.

It appears that in many of the German distilleries the crude spirit is purified by filtration through a deep bed of charcoal. In consequence of the adoption of this method a considerable quantity of aldehyd is generated in the spirit; and in these distilleries a certain portion of the produce is so far contaminated with this substance as to be unfit for any of the uses of spirit of wine. Since the manufacture of chloral has become a matter of so much importance (Dr. Hofmann states that one maker in Berlin is producing a hundred pounds per day), it appeared likely that this spirit, containing aldehyd, would find an economic application. The formula of chloral indicates that it is the chlorine derivative of aldehyd, and the first action of chlorine upon alcohol is to remove two atoms of hydrogen, liberating aldehyd, which, by a substitution change, is then converted into chloral:

$$\underset{\text{Alcohol.}}{C_2H_6O} + Cl_2 = \underset{\text{Aldehyd.}}{C_2H_4O} + 2HCl.$$

$$\underset{\text{Aldehyd.}}{C_2H_4O} + Cl_6 = \underset{\text{Chloral.}}{C_2HCl_3O} + 3HCl.$$

The presence of aldehyd in alcohol ought, therefore, to be no detriment to its use in the preparation of chloral. Nevertheless, it was found that the product obtained from this spirit differed in some respects from the ordinary chloral. Analysis proved that it contained a distinct substance.

It has been shown that when aldehyd is subjected to the action of hydrochloric acid gas, two molecules of it are deprived of the elements of water, and crotonic aldehyd results :—

$$2(C_2H_4O) - H_2O = C_4H_6O.$$

The hydrochloric acid resulting from the first part of the action therefore attacked the free aldehyd, and produced this change. By the further action of chlorine upon this crotonic aldehyd a chlorine derivative was obtained, having the composition $C_4H_3Cl_3O$. Whether this body possesses the same medicinal properties as the ordinary chloral has not been determined.—*Pharm. Journ., Lond., May*, 1870.

ESTIMATION OF THE VALUE OF THE VARIOUS KINDS OF CINCHONA BARK.

By Dr. A. E. Vogl.

Forty grms. of the previously-pulverized bark are intimately mixed with ten grms. of quick-lime, and made into a thin paste with water; and this mixture is dried (the temperature is not stated). The dried mass is pulverized, and repeatedly exhausted with boiling alcohol at 90 per cent. (600 c.c. are a sufficient quantity for this purpose); the alcoholic solution is filtered, and to the filtrate are added about 5 c.c. of dilute sulphuric acid. The ensuing precipitate of gypsum having been removed by filtration, the alcoholic fluid is submitted to distillation, and, after having been greatly reduced in bulk, is further evaporated to a very small bulk on a water-bath, whereby a flocculent, resinous, vanilla-like smelling aromatic substance is precipitated. After this material is again removed by filtration, to the filtrate is added a sufficient quantity of a solution of caustic soda as is required for the precipitation of all the alkaloids contained in the bark. These bodies are, by this mode of treatment, obtained in a high degree of purity in the shape of a white caseous, or crystallino flocculent precipitate; this should be collected on a previously

tared filter, washed with the smallest possible quantity of water, and thoroughly dried, and next weighed. In order to separate the different bases from each other, the aforesaid precipitate is digested for twenty-four hours in a small flask with about 5 c.c. of ether. The ethereal solution is filtered off from the insoluble residue, which is first washed with ether, and next dissolved in alcohol. Each of the solutions so obtained is evaporated, yielding, in some instances, an amorphous, in others, a crystalline residue. These residues are dissolved in dilute sulphuric acid; and, after these solutions have been filtered, the alkaloids are precipitated from these solutions by means of a caustic soda solution, which has been titrated so as to correspond with the dilute sulphuric acid applied as just stated. This method of the estimation of the value of the cinchona barks is recommended by the author for the reason—(1) that it is easily and rapidly executed; (2) because it affords complete exhaustion of the valuable constituents of the bark, with very little, if any, loss; (3) because the bases are obtained directly in a high degree of purity. There are appended to this paper a series of results of analyses of various kinds of barks, made partly by this and partly by other well known methods, as devised by scientific men who, like Dr. de Vrij, Dr. Rabourdin, and Prof. Schneider, are high authorities on this subject. From the results here published, this method deserves every praise.—*Chem. News, Lond., April* 14, 1870.

ON THE CULTIVATION OF SAFFRON.

THE saffron whose stigmas find a use in pharmaceutical preparations, is cultivated in Gatinais (Loiret), and in the neighborhood of Orange and Carpentier (Vaucluse), in France. The plant requires a soil of very good quality, containing much sand and lime, so that water will be readily absorbed, and after evaporation leave the soil again in a loose, not lumpy, condition. It is a soil similar to that employed in southern France for the cultivation of madder, and presents hardly any obstacles to the young rootlets, which is a necessary requirement for the successful growth of the plant.

After a series of rather delicate operations, which tend to break up and prepare the soil, the bulbs are planted in the first half of

July, at distances of three-quarters of an inch, in rows, which are separated from each other about one foot. These bulbs remain in the earth for three years. The flowers appear in October, and are especially plentiful in the second year. They are gathered by hand and put in baskets to wither, without allowing them to be pressed. The harvest lasts from a fortnight to three or four weeks, and yields, on an average, three flowers from each bulb. Seven to eight thousand flowers are counted for one pound of fresh saffron, which will lose four fifths of its weight by drying. One pound of the dried saffron of commerce will therefore represent 35,000 to 40,000 flowers. Immediately after gathering, the stigmas are removed from the flowers, and, without mixing the stamina, are put in small heaps. This part of the work is performed by women, children, and old men, and on account of the powerfully stupefying odor, as much as possible in the open air.

The drying of the saffron is effected by hanging it, distributed on a hair sieve, over a low coal fire. After fifteen minutes the stigmas are stirred up and heated again. When dry the contents of the sieve are put on a large plate, not exposed to moisture, and allowed to get cold, when they are filled in well-dried linen bags, which are kept at a dry place.—*Drug. Cir. & Chem. Gaz.*, May, 1870, from *Jour. Pharm. Chem.*

AMBROSINE.

A NEW fossil resin, found in the phosphate beds of South Carolina, is thus described by Prof. Chas. U. Sheppard, in the *Rural Carolinian*:—"An irregular oval-shaped mass of a mineral closely resembling amber, has been brought to my notice. The mass was originally of the size of a man's fist. It is of a yellowish-brown color externally, but within is clove-brown. It breaks with about the same facility as amber; has a conchoidal fracture, and a resinous lustre. It is feebly translucent. Its specific gravity is but slightly above that of water. Indeed, small fragments of it, when thrown into water, float for a short time, until they part with adhering air, when they slowly descend through the liquid. It is strongly electric by friction. It melts into a clear yellowish liquid at about 460° Fah. It gives off succinic acid before it melts. On fusion a dense yellow oil is volatilized, attended with

an agreeable balsamic odor, wholly unlike that from the resins of our pines.

As it differs from any of the oxygenated hydrocarbons known, I have called it ambrosine—from the two words amber and resin; to both of which substances it bears a resemblance. It is very combustible, burning with a bright yellowish white light, a pleasant odor, and without leaving any carbon, or even the slightest ash behind. It is largely soluble in oil of turpentine, alcohol, ether, and chloroform, as well as in a solution of potash; and is feebly taken up by the strong acids without suffering decomposition. It probably originated in some of the coniferous trees that existed during the pliocene epoch, when our phosphatic formation was in progress of deposition."—*Drug. Cir. & Chem. Gaz.*, May, 1870.

Minutes of the Philadelphia College of Pharmacy.

A stated meeting of the College was held at the College Hall, June 27th, 1870, the President, Dillwyn Parrish, in the Chair.

The minutes of the preceding meeting were read and adopted.

The minutes of the Board of Trustees were read by Alfred B. Taylor, Secretary of the Board, and approved.

The Committee on Latin Labels, not being ready to report, was continued.

The Publishing Committee, in the matter relative to the distribution of the Journal, referred to them at the last meeting, reported that it had been attended to.

The Treasurer of the Building Committee reported that he had paid over the balance in his hands to the Chairman of the Sinking Fund Committee, as directed at the last meeting.

The report of the Delegates to the National Convention for Revising the Pharmacopœia, held at Washington, on the 4th of May last, was given by Alfred B. Taylor. The Convention was duly held; about forty delegates were commissioned, of whom about thirty attended. Prof. Carson, of Philadelphia, was chosen President, and Dr. Miller, of Washington, and William Procter, Jr., Vice-Presidents, and Dr. Riley, Secretary. Contributions toward the revision of the Pharmacopœia were handed in from the Chicago College of Pharmacy, the Baltimore College of Pharmacy, the College of Physicians of Philadelphia, the Philadelphia College of Pharmacy and the Medical Society of the State of New York. These were referred to a Committee to report a plan for the Revision of the Pharmacopœia of 1870, which Committee, on the following day, reported a series of resolutions; most of which were adopted. Among

these was one abolishing measures of capacity from the Pharmacopœia, and another giving the Committee power to issue a new edition, if necessary, before 1880. A Committee of fifteen was then appointed to accomplish the Revision, of which Prof. Carson was made Chairman, and the Committee directed to meet in Philadelphia. Six members of the Committee residing there, and the working quorum of the Committee fixed at three. [A full report of the proceedings will be found at page 289.]

Letters were received from Prof. Joseph Carson, of the University of Pennsylvania, and Prof. John Attfield, of the Pharmaceutical Society at London, acknowledging their election to honorary membership in the College.

Proposition for membership No. 1 was referred to a Committee consisting of Messrs. Procter, Wiegand and Taylor.

The appointment of delegates to attend the American Pharmaceutical Association being in order, the following were appointed to represent this College: William Procter, Jr., Alfred B. Taylor, Joseph P. Remington, Charles Bullock and Prof. Robert Bridges, with power to fill vacancies.

The following delegates to attend the Conference of the Colleges of Pharmacy, to be held in Baltimore, in reference to Pharmaceutical Education, were appointed, viz.: Prof. Robert Bridges, *Chairman*, Prof. John M. Maisch, Prof. Edward Parrish, William Procter, Jr., and Alfred B. Taylor.

The meeting then adjourned.

C. Bullock, *Sec'y.*

Editorial Department.

Meeting of the American Pharmaceutical Association.—For the first time we have failed to receive an official notice from the President for announcement in our July number. The time for the convening of this body (September 13th) is rapidly approaching, and the central position of Baltimore will probably attract a large gathering of the members. The opportunity of again meeting with us will be afforded to the old Southern members, and we hope many new ones. The subjects of local pharmaceutical organization, and of legislation for pharmacy, are now prominent points, and will probably receive due attention at the meeting. There is no doubt of the usefulness of local organization; with or without the accompaniment of a school, it affords a central rallying point for scientific and professional interests, and when accompanied by library and museum accommodations becomes at once something to work for and to be interested in, outside of strictly personal interests. The appointment

of a successor to Prof. J. M. Maisch, who has resigned the permanent secretaryship, will be one of the most important acts of the meeting, and one that will have to be attended to promptly and wisely, as much of the usefulness of the Association depends on the devotedness of that official to its interests in the interim. The financial condition of the Association is another highly important subject. Without money it is certain that the present scope of the Association cannot be continued. The demand from each member is not much, but in the aggregate it is sufficient to carry on the operations of the body. Let that little then be promptly and gracefully paid in aid of the objects in which we all should cooperate. Those that *go* to the meetings pay a much heavier contribution than those who stay; all are welcome, yet when for any reason a member cannot go, let him cheerfully remember that his annual contribution is an active agent in pushing onward the wheels of progress.

Coincident with this meeting will be a Congress of Delegates from Colleges of Pharmacy relative to pharmaceutical education in the United States, and more especially in reference to the attainment of a uniform standard of qualification for graduates.

Careless Reporting of the Pharmacopœial Convention by the Medical Journals.—If anything was needed to prove the small hold which the Pharmacopœia of the United States has on the medical profession, one evidence may be seen in the manner of alluding to it by the medical Journals. The *Medical Gazette*, N. York, calls it the "American Pharmaceutical Association, and says, the "sixth decennial convention was held," &c. Other journals have been equally careless, and appear to overlook the fact that, until the Pharmacopœia becomes thoroughly authoritative as a code of medical recipes and pharmaceutical preparations, equally respected in practice by physicians and pharmaceutists, it is useless to expect a cessation of complaints and disappointments in the intercourse between physicians and apothecaries.

The Schools of Pharmacy.—From what we have learned through regular announcements and otherwise their will be six schools of pharmacy in operation the coming season, under the direction of Colleges of Pharmacy, besides several that are attached to other institutions. Competition is having a good effect, and a generous rivalry in the direction of a better system of instruction will raise the standard value of the diploma. There is a serious want of instruction in analytical and practical pharmaceutical chemistry in the college schools, arising from a difficulty on the part of those engaged in pharmaceutical pursuits to get the time and means; and unless made obligatory, as a condition of graduation and consequently of apprenticeship, there seems no way of securing these branches a place in the curriculum. We have been informed that Mr. Henry C. Lea is about to publish an American Edition of Attfield's

Chemistry, under the supervision of the author, who will adapt it to our Pharmacopœia. This will be a good text-book for our Colleges, who may institute practical schools, and will also be a most valuable aid to home students in the shop, to direct their efforts at gaining a knowledge of practical chemistry by their own efforts. It is not to be expected that a large proportion of students of pharmacy can get the tuition they need in college schools, and it is time that some efforts should be directed by disinterested members of our profession towards encouraging this home effort among the present generation of apprentices and assistants.

The Scientific Soiree of the Biological and Microscopical Section of the Academy of Natural Sciences of Philadelphia, was held at the hall of the College of Physicians, Thirteenth and Locust, on Friday evening, May 13th. The occasion will long be remembered as one of the most brilliant and successful gatherings ever convened to popularize science. The exhibition consisted of anatomical and physiological specimens and models in the upper east room, of a most extensive collection of microscopes, each with an object ready for examination arranged around a series of tables to facilitate their inspection by the crowd of visitors in the library apartment. This was under the direction of Dr. Tyson and Mr. Walmsley and several other gentlemen, and was a rare treat from the variety and rarity of the specimens and the excellence of many of the instruments. In the lower east room Prof. Robert E. Rodgers exhibited a variety of electric and electro-magnetic experiments, and in the west room Dr. J. S. Cohen had charge of instruments illustrating sound and the vibrations on which it depends. In the lecture room Dr. J. Gibbons Hunt exhibited a great variety of microphotographs of animal and vegetable structure, and many other views, by means of the gas microscope and stereopticon. The rooms were open from half-past 7 until 11 o'clock, and most of the time were crowded with a company representing the most intelligent class of society, a large proportion of whom were ladies. The microscopes, numbering more than eighty, certainly were most attractive and many of them were instruments of great power, including several that were binocular. The upper and lower halls were decorated with exotic plants and flowers, and the whole brilliantly lighted. The Directors, Dr. S. Wier Mitchell and Dr. Wm. Pepper, and their aids, were unceasing in their efforts to add to the interest and satisfaction of the visitors, and all passed off satisfactorily.

Metric Weights and Measures.—We learn through the *Chemist and Druggist*, that at a meeting of the "International Decimal Association, held at the rooms of the Society of Arts, Sir Charles Adderly, M.P., moved the following resolution: "That the great inconvenience to agriculture, manufacturers and commerce, as well as to science, resulting from the numerous complicated and anomalous weights and measures now

in use, whether by law or custom, in the British empire, demands the attention of the Legislature at the earliest practical time, with a view to the establishment of some convenient uniform decimal system throughout the United Kingdom." Which resolution was carried, but two speakers being in the negative. One of these, however, was Prof. Airey, the Astronomer-Royal, who spoke in favor of the English weights and measures as more useful in practice from their ready subdivision by halving and quartering. They also recommended the substitution of metrical for troy weights, it having been recommended to abolish the latter by the Standard Commissioners, and thus make an entering wedge to their general introduction. They also advocate the system of international coinage, based on gold of nine-tenths purity, with a decimal division.

Prof. Liebig.—From a notice in Cosmos, June 4th, this savant has been seriously ill from a dangerous abcess in the neck, requiring a surgical operation. The paper considered his recovery doubtful; but as nothing has yet been announced, we presume this eminent and useful laborer in science has recovered.

Pepsine.—The following query, received sometime ago, was accidently overlooked:

Philadelphia, 3d mo. 19th, 1870.

Dear Sir :—Through the pages of the Journal of Pharmacy at its next issue will you oblige a subscriber by replying to this query: In the preparation of "pepsine," by the method of Boudault, is the product in any way injured if the solution, after treatment with sulphuretted hydrogen, is filtered through carbo animalis, a step which seems necessary to free it from the sulphuret of lead prior to evaporation?

A Subscriber.

The treatment of pepsine in solution with a moderate quantity of animal charcoal will cause no material loss, and will remove its odor. As the object is deodorization and *not* decoloration, the smallest quantity suitable to remove the odor will be best.

Pharmacy in New Jersey.—Our New Jersey friends are in earnest in pushing the organization of their body. In our May number a notice was given of the initial meeting at Newark, Feb. 24th. The Secretary, Mr. Charles B. Smith, in a letter dated May 27th, sends several copies of the proposed law, as adopted at the meeting held in Trenton on the 24th of March, to which he alludes in the following extract:

"At the meeting held in Trenton, March 24th, 1870, one member from each County in the State was added to the Legislative Committee.

"The Chairman of that Committee was directed to have printed five hundred copies of the law as amended, and to place one copy in the hand of every druggist in the State, with the request to return them with their written approval or objection any time before July 1st. Upon those

returned copies the Committee will report at a special meeting to be held at Long Branch, Wednesday, August 17th, 1870."

The proposed New Jersey Law is mainly that of the American Pharmaceutical Association reported in September last, with certain modifications, rendered necessary by the circumstances of New Jersey. It embraces registration, the sale of poisons and the adulteration of drugs. When the meeting of August has determined the deliberate sentiment of the members in regard to the law, some changes may occur, and then it will probably be offered for Legislative action.

West Virginia Pharmaceutical Association.—The following circular has been distributed and the druggists of West Virginia invited to take part in the movement, at a meeting named for April 26th ult., at Wheeling, Va. It was signed by H. Treverton Bond, *Sec. pro tem.* We have not heard the result:

We, the undersigned Practical Druggists, desirous of promoting the cause of Pharmacy in our midst, do hereby agree to form an Association to be known as the "*West Virginia Pharmaceutical Association*," having for its object the cultivation, improvement and dissemination of a knowledge of Pharmacy and its collateral branches of sciences, and of giving instruction in the same, by such method as may hereafter be determined upon.

Edmund Bocking,	T. H. Logan,	C. R. Hubbard,
R. B. McLain,	Samuel Laughlin,	James Reed,
H. Treverton Bond,	Jas. Murray,	F. L. Braun,
Thos. J. Finney,	John List,	J. H. Silvey,
G. W. C. Carroll,	S. L. Brice,	Samuel Owen,
Jno. G. McLain.		

Pharmacy in Indiana.—*The Daily Gazette*, of Fort Wayne, Indiana, of June 21, 1870, gives the proceedings of a meeting to organize a Pharmaceutical Association held at the City Clerk's office on the preceding evening. Mr. Wagner was chosen temporary chairman. After some discussion Mr. Sweringen was elected *permanent* President, Mr. Biddle Vice-president, Mr. G J. Mayer Secretary, and Mr. Nill Treasurer.

A committee, consisting of Messrs. Marshall, Wagner, Nill, Meyer and Zimmermann, was appointed to draft a constitution and by-laws, and report to the next meeting. On motion of Mr. Marshall and after a lively discussion, it was resolved to call the organization "The Indiana Pharmaceutical Association;" when the meeting adjourned to meet on the 27th of June next.

Chinese Pharmacy in New York.—According to the *Med. and Surg. Reporter*, of Philadelphia, "*Lum Ling Wan*, a native Chinese physician, proposes to settle in New York and enter upon the practice of his profession. He brings with him his wife, an interpreter, *Lu Sing*, two Chinese apothecaries, *Ah Mok* and *Ah Sam*, and an endless assortment of drugs and medicines." It is said that in China physicians are paid

pending the continued health of their patients, the fees ceasing on the appearance of sickness. It may be doubted whether this plan would suit in New York.

Advertising Sheet of the American Journal of Pharmacy.—The Publishing Committee have determined to issue the advertising sheet appended to this Journal every month, so as to offer a more favorable medium for business men. On those months intermediate between the usual issues of the Journal, viz., February, April, June, August, October and December, the Advertiser will appear separately, accompanied by a small news leaf, and probably with a price current. This arrangement, which will begin with August, but will probably not be in good working order until January, will enable the Editor to announce recent pharmaceutical news every month, and, as it is our wish to keep the sheet for legitimate advertisements in the drug and chemical and pharmaceutical trade, the book trade, scientific and medical institution school notices, with a corner for clerks and employers, and another for advertising the sale of stores, etc.; it is believed that an excellent medium will thus be afforded for clerks, assistants, apprentices and employers to communicate with each other. The terms under the new arrangement will be stated in the August sheet.

Hydrate of Chloral.—Albert Dung & Co., agents for Dr. Liebreich's hydrate of chloral, as manufactured at Berlin, has sent us a sample for examination. It has been subjected to tests with success and has been used therapeutically by several physicians with satisfaction. It is in crystalline cubical masses like spermaceti, is soluble in its own weight of water, is unaffected by nitrate of silver, permanganate of potassa is unchanged by it as suggested by Dr. Rieckher.

This notice should have appeared in May, but was crowded out.

Massachusetts College of Pharmacy.—The Second Annual Commencement of this Institution was held in Boston on June 22d, when Charles Harrison Bassett, Joseph Howes Dyer, Edward Samuel Kelley, Horace Augustus Prescott, George Estus Raymore and James Stewart Talbot received its Diploma. Valedictory by Prof. Cyrus M. Tracy. On the 24th of June an Alumni Association was formed and the following officers chosen:—G. F. H. Markoe, *President;* H. W. Lincoln and J. T. Brown, Jr., *Vice Presidents;* T. Dohber, *Secretary;* C. H Bassett, *Treasurer.*

Dr. Simpson's Reply to Dr. Bigelow.—The Journal of the Gynæcological Society of Boston publishes this letter in a supplement to the May number. It is probably the last paper of the distinguished author, and as giving the views and belief of one largely concerned in the *history* of anæsthesia is worthy a careful perusal. As we have not read the letter

of Dr. Bigelow, any remarks in that direction would be out of place, but we may be warranted in saying that Dr. Simpson's views of the claims of Dr. Horace Wells, as initiating the series of experiments and arguments that resulted in the discovery of anæsthesia, as a great ameliorator in surgical operations, agrees with our own; for though dentistry is a distinct profession, yet the extraction of teeth is as much a surgical operation as any other act that excises or removes an organ or part of the human body, involving pain. The failure of Wells at first to manipulate satisfactorily with nitrous oxide, lead Morton to look around for a better agent, and in doing so to seek the chemical aid of Dr. Jackson. The new agent, ether, was successful, and surgical anæsthesia was proclaimed to the world as a great fact and was duly acknowledged. Practical anæsthesia having thus become, through American minds, the property of mankind, it was just and proper that all the world should strive to extend its benefits, and certainly one of the greatest and most earnest of these strivers was Dr. Simpson; first, in his application of ethereal anæsthesia to midwifery, and then, in the pursuit of this idea, his recognition and application of the anæsthetic properties of chloroform. That anæsthesia should be effected more through chloroform than ether, in Europe, is not surprising, or that ether, or a mixture, should be most used here. Certainly the record, as regards accidents, is against chloroform and in favor of the safety of ether.

Cyclopœdia of Quantitative Chemical Analysis, by Frank H. Storer. —The first sheet, as a sample of this work, has been received. No programme or explanation came with it. The presumption is that the Author proposes its publication. If carried out in the manner of the sheet sent it will be a valuable compendium of analytical information, arranged alphabetically.

Dr. Attfield's Saturation Tables.—The Editor acknowledges the reception of a copy of these tables from Mr. H. Silverlock, 92 Blackfriars road, London. This chart is copied from Attfield's Pharmaceutical Chemistry, and is a useful aid to the dispenser when placed in a position for ready reference.

OBITUARY.

Charles B. Notson, pharmaceutist, formerly of Philadelphia, died at St. Josephs, Missouri, on the morning of the 17th of April last, in the 31st year of his age, of a severe affection of the throat. Mr. Notson was the son of Dr. Wm. Notson of this city. He studied pharmacy here and graduated at the Philadelphia College of Pharmacy in March, 1865. He settled in St. Josephs in 1868, in the drug business, in partnership with Mr. Brokaw, with decided success. On the formation of the Pharmaceutical Association of St. Josephs, in February last, Charles B. Notson

was elected its Vice-President, and was in good esteem among his brethren as an able pharmaceutist and an honorable and worthy member of the community. Mr. Notson leaves a widow and daughter, having married about two years since.

At a meeting of the Pharmaceutical Association of St. Josephs, that body passed resolutions appreciative of the deceased and sympathizing with his family.

Samuel Lenher, Pharmaceutist of Philadelphia, died of disease of the heart, on the evening of the 20th inst., in the forty-sixth year of his age.

Mr. Lenher's first connection with our business was in a store where the opportunities for education were so meagre, and the character of the employment so distasteful that he had determined to make a change, which he soon after carried into effect, as he found a situation in the establishment of the late Frederick Brown, where he continued his studies and graduated after a term of four years apprenticeship.

His connection with Mr. Brown was an unusually long one, lasting between sixteen and seventeen years, an evidence of the high estimate that his acute preceptor set upon his services; he was for twelve years the chief assistant in the establishment, and to his scientific knowledge and attention to business much of the superiority of his employers pharmacy must be attributed. A remarkable aptitude for mechanics enabled him to design and execute apparatus that proved very valuable in business; it is to be regretted that his modesty and retiring disposition prevented him from becoming better acquainted with his pharmaceutical brethren, and them from learning much that he would have been pleased to communicate.

To those who were well acquainted with him, he was gentle and pleasant in manners, while free and decided in the expression of his opinions; but it was in the relations of son and brother his character was most beautifully manifested by the affection he ever evinced for his family.

For the last few months his health, which had been seriously impaired by too close attention to a business we all know permits far too little time for relaxation, gave way and he gradually sunk after great suffering.

T. S. W.

Sir James Young Simpson. "The death of the distinguished discoverer of the anæsthetical properties of chloroform, Sir James Y. Simpson, at Edinburgh, on the 8th of May, of angina pectoris complicated with heart disease, in his 59th year, is announced by cable. Dr. Simpson was born in the year 1811, in Bathgate, Linlithgowshire, Scotland. He received his education in the University of Edinburgh, from which he graduated in 1832 with the degree of M.D. Immediately after graduating he was appointed an assistant to Professor Thomson of the University, and he proved his eminent fitness for the position by an able series of lectures which he delivered during the illness of his principal, in 1836. In 1840 Dr. Simpson was elected to the Professorship of Midwifery in the Edin-

burgh University, and this position he held during the remainder of his life. It was on the 19th of January, 1847, that he first applied anæsthesia to midwifery practice, and his subsequent investigations in the same direction led to the discovery of the anæsthetical properties of chloroform. The importance of these investigations can scarcely be overestimated, and they have completely revolutionized some of the features of medical and surgical practice. Dr. Simpson was elected President of the Edinburgh Royal College of Physicians in 1849, and in 1852 President of the Medico-Chirurgical Society. In 1853 the French Academy of Medicine complimented him by electing him a Foreign Associate, and a still higher compliment was paid him in 1856 by the award of the "Monthyon Prize," of 2000 francs, by the French Academy of Sciences, in consideration of the benefits conferred upon humanity by the introduction of anæsthesia by chloroform into the practice of surgery and midwifery. About the same time he received the Knighthood of the Royal Order of St. Olaf from King Oscar of Sweden.

Dr. Simpson was the author of numerous medical treatises that are well known in all quarters of the world, and many of them have been translated into nearly all the European languages. In January, 1866, he was created a baronet, in recognition of his services as the discoverer of the anæsthetic properties of chloroform, and in the same year he received the honorary degree of D. C. L. from the University of Oxford. In September, 1867, he was President of the Department of Health in the Social Science Congress held at Belfast. The lectures of Dr. Simpson did much towards giving the Edinburgh School of Medicine its high reputation, and his fame as a physician secured him the largest practice, perhaps, ever enjoyed by any member of the profession in Scotland. The claims of Dr. Simpson to the honor of being the first discoverer of the anæsthetical properties of chloroform have been disputed, but it is generally considered that he is entitled to it."—*Med. and Surg. Reporter.*

Heinrich Gustav Magnus, of the University of Berlin, Prussia, died on the 4th of April, aged 68 years. He occupied the Chair of Natural Philosophy and Technology, and was one of the most prominent among the German Naturalists.—(*Fr. Hoff.*)

William Neergaard, Jr., son of William Neergaard, Pharmaceutist of New York, died in that city on the 27th of April, of heart disease arising from rheumatism, at the age of 21 years. In 1866, after having received a good education, he was placed by his father as an apprentice, in the pharmacy of Prof. Maisch, of Philadelphia, during two years, and attended two courses at our College. An attack of disease caused his return to New York, where he subsequently graduated in Pharmacy in 1869. The deceased was intelligent, studious, quick in perception, clear in judgment, possessed of exemplary habits and promised to become an ornament to his profession.